

PROOF OF THE CONTINUED FRACTION CONJECTURE FOR

$$(a, b) = (z, z^6 + z^4 + z^3 + z^2 + z + 1)$$

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ABSTRACT. The continued fraction conjecture claims that the continued fraction defined by the (a, b) -Thue-Morse sequence is algebraic over $\mathbb{F}_2(x)$ for all pairs of distinct elements (a, b) in $\mathbb{F}_2[x] \setminus \mathbb{F}_2$. In this paper we prove the conjecture for $(a, b) = (z, z^6 + z^4 + z^3 + z^2 + z + 1)$.

1. INTRODUCTION

Let $\mathbb{F}_2$ be the finite field of cardinality 2. Given a sequence of polynomials $\mathbf{a} = (a_0(z), a_1(z), a_2(z), \dots)$ of elements from $\mathbb{F}_2[z] \setminus \mathbb{F}_2$, we define the infinite continued fraction

$$(1.1) \quad \text{CF}(\mathbf{a}(z)) = \frac{1}{a_0(z) + \frac{1}{a_1(z) + \frac{1}{a_2(z) + \frac{1}{\ddots}}}}$$

as the limit of the finite continued fractions

$$(1.2) \quad \text{CF}_n(\mathbf{a}(z)) = \frac{1}{a_0(z) + \frac{1}{a_1(z) + \frac{1}{\ddots + \frac{1}{a_n(z)}}}} \in \mathbb{F}_2((1/z)).$$

Conversely, each power series in $\mathbb{F}_2[[1/z]]$ without constant term

$$(1.3) \quad c_{-1}z^{-1} + c_{-2}z^{-2} + c_{-3}z^{-3} + \dots$$

admits a continued fraction expansion of form (1.1).

Let a and b be two distinct elements from $\mathbb{F}_2[z] \setminus \mathbb{F}_2$. We consider the continued fraction (1.1) associated with the (a, b) -Thue-Morse sequence

$$\mathbf{t} = (t_0(z), t_1(z), t_2(z), \dots) = (a, b, b, a, b, a, a, b, \dots)$$

that we shall denote

$$(1.4) \quad \text{CF}(a, b) := \text{CF}(\mathbf{t}).$$

Date: 9/04/2020 20:28:04 .

2010 Mathematics Subject Classification. 11B85, 11J70, 11B50, 11Y65, 05A15.

Key words and phrases. automatic sequence, continued fraction, Thue-Morse sequence.

* This paper was automatically generated from a computer program developed by the authors, with 3.8 hours CPU time used.

Theorem 1.1. *When $(a, b) = (z, z^6 + z^4 + z^3 + z^2 + z + 1)$, the two power series $\text{CF}(a, b)$ and $\text{CF}(b, a)$ are algebraic over $\mathbb{F}_2(z)$, with minimal polynomials of the form*

$$p_4(z)y^4 + p_3(z)y^3 + p_2(z)y^2 + p_1(z)y + p_0(z) = 0$$

where, for $\text{CF}(a, b)$,

$$p_0(z) = z^{24} + z^{21} + z^{18} + z^{17} + z^{16} + z^{15} + z^{14} + z^{11} + z^{10} + z^9 + z + 1,$$

$$p_1(z) = z^{27} + z^{25} + z^{22} + z^{18} + z^{17} + z^{16} + z^{12} + z^{10} + z^7 + z^3 + z^2 + z,$$

$$p_2(z) = z^{28} + z^{26} + z^{20} + z^{18} + z^{14} + z^2,$$

$$p_3(z) = z^{27} + z^{25} + z^{22} + z^{18} + z^{17} + z^{16} + z^{12} + z^{10} + z^7 + z^3 + z^2 + z,$$

$$p_4(z) = z^{26} + z^{21} + z^{17} + z^{16} + z^{15} + z^{11} + z^{10} + z^9 + z^4 + z^2 + z,$$

and for $\text{CF}(b, a)$,

$$p_0(z) = z^{21} + z^{18} + z^{17} + z^{15} + z^{14} + z^{12} + z^{11} + z^{10} + z^9 + z^8 + z,$$

$$p_1(z) = z^{27} + z^{25} + z^{22} + z^{18} + z^{17} + z^{16} + z^{12} + z^{10} + z^7 + z^3 + z^2 + z,$$

$$p_2(z) = z^{28} + z^{26} + z^{20} + z^{18} + z^{14} + z^2,$$

$$p_3(z) = z^{27} + z^{25} + z^{22} + z^{18} + z^{17} + z^{16} + z^{12} + z^{10} + z^7 + z^3 + z^2 + z,$$

$$p_4(z) = z^{26} + z^{24} + z^{21} + z^{17} + z^{15} + z^{12} + z^{11} + z^{10} + z^9 + z^8 + z^4 + z^2 + z + 1$$

2. PROOF

Define the sequences of polynomials $(P_n(z))_{n \geq 0}$ and $(Q_n(z))_{n \geq 0}$ by

$$\begin{pmatrix} P_n(z) & Q_n(z) \\ P_{n-1}(z) & Q_{n-1}(z) \end{pmatrix} := \begin{pmatrix} t_n(z) & 1 \\ 1 & 0 \end{pmatrix} \begin{pmatrix} t_{n-1}(z) & 1 \\ 1 & 0 \end{pmatrix} \cdots \begin{pmatrix} t_0(z) & 1 \\ 1 & 0 \end{pmatrix} \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}.$$

By the basic properties of continued fractions, we have

$$(2.1) \quad \text{CF}_n(a, b) = \frac{P_n(z)}{Q_n(z)} \in \mathbb{F}_2((1/z)).$$

As formula (2.1) is not efficient for calculating $\text{CF}_n(a, b)$, a fast method is to be derived and described as follows. Define

$$\begin{aligned} M_n(x) &= x^{\deg(t_{2^n-1})} \begin{pmatrix} t_{2^n-1}(1/x) & 1 \\ 1 & 0 \end{pmatrix} \times x^{\deg(t_{2^n-2})} \begin{pmatrix} t_{2^n-2}(1/x) & 1 \\ 1 & 0 \end{pmatrix} \times \\ &\quad \cdots \times x^{\deg(t_0)} \begin{pmatrix} t_0(1/x) & 1 \\ 1 & 0 \end{pmatrix}, \\ W_n(x) &= x^{\deg(\bar{t}_{2^n-1})} \begin{pmatrix} \bar{t}_{2^n-1}(1/x) & 1 \\ 1 & 0 \end{pmatrix} \times x^{\deg(\bar{t}_{2^n-2})} \begin{pmatrix} \bar{t}_{2^n-2}(1/x) & 1 \\ 1 & 0 \end{pmatrix} \times \\ &\quad \cdots \times x^{\deg(\bar{t}_0)} \begin{pmatrix} \bar{t}_0(1/x) & 1 \\ 1 & 0 \end{pmatrix}, \end{aligned}$$

where $\bar{t}$ is the (b, a) -Thue-Morse sequence. By the properties of the Thue-Morse sequence, we have for $n \geq 0$

$$M_{n+1}(x) = W_n(x) \cdot M_n(x),$$

$$W_{n+1}(x) = M_n(x) \cdot W_n(x).$$

Let $x := 1/z$. For each non-zero polynomial $P(z)$, define $\tilde{P}(x)$ to be $P(1/x)$. Then,

$$\text{CF}_n(a, b) = \frac{P_n(z)}{Q_n(z)} = \frac{\tilde{P}_n(x)}{\tilde{Q}_n(x)} \in \mathbb{F}_2((x)) = \mathbb{F}_2((1/z)).$$

Comparing the definition of $M_n(x)$ with the definition of $P_n(x)$ and $Q_n(x)$, we see that

$$\begin{aligned} M_n(x)_{0,1} &= x^{d_n} \tilde{P}_{2^n-1}(x), \\ M_n(x)_{0,0} &= x^{d_n} \tilde{Q}_{2^n-1}(x), \end{aligned}$$

for some positive integer d_n . Hence,

$$(2.2) \quad \text{CF}_{2^{2^n}-1}(a, b) = \frac{\tilde{P}_{2^{2^n}-1}(x)}{\tilde{Q}_{2^{2^n}-1}(x)} = \frac{M_{2^n}(x)_{0,1}}{M_{2^n}(x)_{0,0}}.$$

Therefore, by the convergence theorem of continued fraction, the algebraicity of $\text{CF}(a, b)$ will be established if it is shown that both $M_{2^n}(x)_{0,1}$ and $M_{2^n}(x)_{0,0}$ converge to algebraic series in $\mathbb{F}_2[[x]]$.

Actually, we will prove that for all $0 \leq i, j \leq 1$ the four sequences $(M_{2^n}(x)_{i,j})_n$, $(M_{2^{n+1}}(x)_{i,j})_n$, $(W_{2^n}(x)_{i,j})_n$, and $(W_{2^{n+1}}(x)_{i,j})_n$ converge to algebraic series in $\mathbb{F}_2[[x]]$. For this purpose, we define four 2×2 matrices M^e, M^o, W^e, W^o as follows: For each $T \in \{M^e, M^o, W^e, W^o\}$ and $0 \leq i, j \leq 1$, $T_{i,j}$ is defined to be the unique solution in $\mathbb{F}_2[[x]]$ of the polynomial $\phi(T, i, j)$ under certain initial conditions; the polynomials $\phi(T, i, j)$ and initial conditions are given in Section 3. We will prove that these four matrices, whose components are algebraic by definition, are the limits of $(M_{2^n}(x))_n$, $(M_{2^{n+1}}(x))_n$, $(W_{2^n}(x))_n$, and $(W_{2^{n+1}}(x))_n$.

Let us explain how the polynomials $\phi(T, i, j)$ and initial conditions are found, and why the solutions exist and are unique. For $0 \leq i, j \leq 1$, the coefficients of the polynomial $\phi(M^e, i, j)$ (resp. $\phi(M^o, i, j)$, $\phi(W^e, i, j)$, and $\phi(W^o, i, j)$) are the Padé-Hermite approximants of type

$$(175, 175, 175, 175, 175)$$

of the vector

$$(1, T^3, T^6, T^9, T^{12}),$$

where $T = M_{12,i,j}$ (resp. $M_{11,i,j}$, $W_{12,i,j}$, and $W_{11,i,j}$), found by the Derksen algorithm. We take the first 8 terms of $M_{12,i,j}$ (resp. $M_{11,i,j}$, $W_{12,i,j}$, and $W_{11,i,j}$) as initial conditions for $\phi(M^e, i, j)$ (resp. $\phi(M^o, i, j)$, $\phi(W^e, i, j)$, and $\phi(W^o, i, j)$). The following fact will be used to ensure that the solution exists and is unique: let $P(x, y) \in \mathbb{F}_2[x, y]$ and for each series $f(x) = \sum_{n=0}^{\infty} a_n x^n \in \mathbb{F}_2[[x]]$ denote the partial sum $\sum_{j=0}^{n-1} a_j x^j$ by $f_n(x)$ for $n \geq 0$. If for some $n \geq 0$ and $a_0, a_1, \dots, a_{n-1} \in \mathbb{F}_2$ $P(x, \sum_{j=0}^{n-1} a_j x^j) = O(x^n)$ and $Q(x, y) := P(x, \sum_{j=0}^{n-1} a_j x^j + x^n y)$ can be written as $x^m \sum_{j=0}^{\infty} q_j(x) y^j$ where $q_j(x)$ are polynomials for $j \geq 0$, $q_1(0) = 1$, and $q_j(0) = 0$ for $j > 1$, then there exists a unique solution $f(x) \in \mathbb{F}_2[[x]]$ of $P(x, f(x)) = 0$ that satisfies the initial condition $f_n(x) = \sum_{j=0}^{n-1} a_j x^j$.

We state two lemmas concerning the four matrices M^e, M^o, W^e, W^o . The first one is about relations between them; the second, about the structure of the each matrix.

Lemma 2.1. *We have*

$$(2.3) \quad M^e = W^o \cdot M^o,$$

$$(2.4) \quad M^o = W^e \cdot M^e,$$

$$(2.5) \quad W^e = M^o \cdot W^o,$$

$$(2.6) \quad W^o = M^e \cdot W^e.$$

Proof. We give the proof of the identity

$$M_{0,0}^e = W_{0,0}^o M_{0,0}^o + W_{0,1}^o M_{1,0}^o,$$

the proofs of the others being similar.

First, we compute the minimal polynomials of $W_{0,0}^o M_{0,0}^o$ and $W_{0,1}^o M_{1,0}^o$. We know that

$$P(x, y) = \text{Res}_z (\phi(W^o, 0, 0)(x, z), z^{12} \cdot \phi(M^o, 0, 0)(x, y/z))$$

is an annihilating polynomial of $W_{0,0}^o M_{0,0}^o$. We use Padé-Hermite approximation to find a candidate for the minimal polynomial of $W_{0,0}^o M_{0,0}^o$, that will be called $\phi_0(x, y)$. To prove that $\phi_0(x, y)$ is indeed the minimal polynomial, it suffices to prove that it is an irreducible factor of $P(x, y)$ of multiplicity m and that $Q(x, y) := P(x, y)/\phi_0(x, y)^m$ is not an annihilating polynomial of $W_{0,0}^o M_{0,0}^o$. We verify the first point directly. For the second point, we truncate $W_{0,0}^o M_{0,0}^o$ to order 630 and substitute it for y in $Q(x, y)$. We get a series of valuation less than 630, which proves that $Q(x, y)$ is not an annihilating polynomial of $W_{0,0}^o M_{0,0}^o$. We find the minimal polynomial $\phi_1(x, y)$ of $W_{0,1}^o M_{1,0}^o$ in a similar way.

Now we prove that $\phi(M^e, 0, 0)$ is the minimal polynomial of $W_{0,0}^o M_{0,0}^o + W_{0,1}^o M_{1,0}^o$. We know that

$$S(x, y) = \text{Res}_z (\phi_0(x, z), \phi_1(x, y + z))$$

is an annihilating of $W_{0,0}^o M_{0,0}^o + W_{0,1}^o M_{1,0}^o$. We verify that $\phi(M^e, 0, 0)$ is an irreducible factor of $S(x, y)$ of multiplicity μ , and that $Q(x, y) := S(x, y)/\phi(M^e, 0, 0)^\mu$ is not an annihilating polynomial of $W_{0,0}^o M_{0,0}^o + W_{0,1}^o M_{1,0}^o$. To see the last point, we truncate $W_{0,0}^o M_{0,0}^o + W_{0,1}^o M_{1,0}^o$ to order 770 and substitute it for y in $Q(x, y)$. We get a series of valuation less than 770, and therefore $Q(x, y)$ is not an annihilating polynomial of $W_{0,0}^o M_{0,0}^o + W_{0,1}^o M_{1,0}^o$.

Finally, the first 16 terms of $M_{0,0}^e$ and $W_{0,0}^o M_{0,0}^o + W_{0,1}^o M_{1,0}^o$ coincide. As these first terms determine a unique solution of $\phi(M^e, 0, 0)$, we know that the two series are one and the same. $\square$

Define

$$R^e = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \quad \text{and} \quad R^o = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}.$$

Lemma 2.2. *For all integers $k \geq 2$ and $u = 2^{2k-1}$, the following identities hold.*

$$\begin{aligned} M^e[:14u] &= M^e[:7u] + x^{3u} M^e[:4u] + x^{4u} M^e[:3u] + x^{3u} M^e[:7u] + x^{6u} M^e[:4u] \\ &\quad + x^{7u} M^e[:3u] + x^{4u} M^e[:7u] + x^{7u} M^e[:4u] + x^{8u} M^e[:3u] \\ &\quad + x^{6u} M^e[:7u] + x^{9u} M^e[:4u] + x^{10u} M^e[:3u] + x^{9u} M^e[:5u] \\ &\quad + x^{12u} M^e[:2u] + x^{10u} M^e[:4u] + (x^{7u} + x^{10u} + x^{11u} + x^{13u}) R^e, \\ W^e[:14u] &= W^e[:7u] + x^{3u} W^e[:4u] + x^{4u} W^e[:3u] + x^{3u} W^e[:7u] + x^{6u} W^e[:4u] \\ &\quad + x^{7u} W^e[:3u] + x^{4u} W^e[:7u] + x^{7u} W^e[:4u] + x^{8u} W^e[:3u] \end{aligned}$$

$$\begin{aligned}
& + x^{6u}W^e[:7u] + x^{9u}W^e[:4u] + x^{10u}W^e[:3u] + x^{9u}W^e[:5u] \\
& + x^{12u}W^e[:2u] + x^{10u}W^e[:4u] + (x^{7u} + x^{10u} + x^{11u} + x^{13u})R^e.
\end{aligned}$$

For all integers $k \geq 2$ and $u = 2^{2k}$, the following identities hold.

$$\begin{aligned}
M^o[:14u] &= M^o[:7u] + x^{3u}M^o[:4u] + x^{4u}M^o[:3u] + x^{3u}M^o[:7u] + x^{6u}M^o[:4u] \\
&+ x^{7u}M^o[:3u] + x^{4u}M^o[:7u] + x^{7u}M^o[:4u] + x^{8u}M^o[:3u] \\
&+ x^{6u}M^o[:7u] + x^{9u}M^o[:4u] + x^{10u}M^o[:3u] + x^{9u}M^o[:5u] \\
&+ x^{12u}M^o[:2u] + x^{10u}M^o[:4u] + (x^{7u} + x^{10u} + x^{11u} + x^{13u})R^o, \\
W^o[:14u] &= W^o[:7u] + x^{3u}W^o[:4u] + x^{4u}W^o[:3u] + x^{3u}W^o[:7u] + x^{6u}W^o[:4u] \\
&+ x^{7u}W^o[:3u] + x^{4u}W^o[:7u] + x^{7u}W^o[:4u] + x^{8u}W^o[:3u] \\
&+ x^{6u}W^o[:7u] + x^{9u}W^o[:4u] + x^{10u}W^o[:3u] + x^{9u}W^o[:5u] \\
&+ x^{12u}W^o[:2u] + x^{10u}W^o[:4u] + (x^{7u} + x^{10u} + x^{11u} + x^{13u})R^o.
\end{aligned}$$

Proof. To prove Lemma 2.2 we first construct an automaton for each sequence concerned, and then transform the conditions on infinitely many k 's into finitely many conditions on the states of the automaton. In the following, we will prove that for $T = M_{0,0}^o$, for all integer $k \geq 2$ and $u = 2^{2k}$,

$$\begin{aligned}
T[:14u] &= T[:7u] + x^{3u}T[:4u] + x^{4u}T[:3u] + x^{3u}T[:7u] + x^{6u}T[:4u] + x^{7u}T[:3u] \\
&+ x^{4u}T[:7u] + x^{7u}T[:4u] + x^{8u}T[:3u] + x^{6u}T[:7u] + x^{9u}T[:4u] \\
&+ x^{10u}T[:3u] + x^{9u}T[:5u] + x^{12u}T[:2u] + x^{10u}T[:4u].
\end{aligned}$$

The proof of the other 15 cases are similar. We break down the above identity into 7 parts:

$$\begin{aligned}
0 &= x^{4u}T[3u:4u] + x^{3u}T[4u:5u] + T[7u:8u], \\
0 &= x^{8u}T[:u] + x^{4u}T[4u:5u] + x^{3u}T[5u:6u] + T[8u:9u], \\
0 &= x^{8u}T[u:2u] + x^{4u}T[5u:6u] + x^{3u}T[6u:7u] + T[9u:10u], \\
0 &= x^{8u}T[2u:3u] + x^{7u}T[3u:4u] + x^{6u}T[4u:5u] + x^{4u}T[6u:7u] \\
&+ T[10u:11u], \\
0 &= x^{6u}T[5u:6u] + T[11u:12u], \\
0 &= x^{12u}T[:u] + x^{6u}T[6u:7u] + T[12u:13u], \\
0 &= x^{12u}T[u:2u] + x^{10u}T[3u:4u] + x^{9u}T[4u:5u] + T[13u:14u],
\end{aligned}$$

which can be rewritten as

$$(2.7) \quad 0 = T[[11w]_2] + T[[100w]_2] + T[[111w]_2],$$

$$(2.8) \quad 0 = T[[w]_2] + T[[100w]_2] + T[[101w]_2] + T[[1000w]_2],$$

$$(2.9) \quad 0 = T[[1w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1001w]_2],$$

$$(2.10) \quad 0 = T[[10w]_2] + T[[11w]_2] + T[[100w]_2] + T[[110w]_2] + T[[1010w]_2],$$

$$(2.11) \quad 0 = T[[101w]_2] + T[[1011w]_2],$$

$$(2.12) \quad 0 = T[[w]_2] + T[[110w]_2] + T[[1100w]_2],$$

$$(2.13) \quad 0 = T[[1w]_2] + T[[11w]_2] + T[[100w]_2] + T[[1101w]_2],$$

for all binary word w of length $2k$ and $w \neq 0^{2k}$, and

$$(2.14) \quad 0 = T[[11w]_2] + T[[100w]_2] + T[[111w]_2],$$

$$(2.15) \quad 0 = T[[w]_2] + T[[100w]_2] + T[[101w]_2] + T[[1000w]_2],$$

$$(2.16) \quad 0 = T[[1w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1001w]_2],$$

$$(2.17) \quad 0 = T[[10w]_2] + T[[11w]_2] + T[[100w]_2] + T[[110w]_2] + T[[1010w]_2],$$

$$(2.18) \quad 0 = T[[101w]_2] + T[[1011w]_2],$$

$$(2.19) \quad 0 = T[[w]_2] + T[[110w]_2] + T[[1100w]_2],$$

$$(2.20) \quad 0 = T[[1w]_2] + T[[11w]_2] + T[[100w]_2] + T[[1101w]_2],$$

for $w = 0^{2k}$.

First we calculate an 2-automaton that generates T from its minimal polynomial and its first terms. This automaton has 6324 states; its transition function and output function can be found in the annex. Let $A(s, w)$ denote the state reached after reading w from right to left starting from the state s , and τ the output function. Define

$$E_{2k} = \{A(i, w) : |w| = 2k, w \neq 0^{2k}\}.$$

Identities (2.7) through (2.20) can be written as

$$(2.21) \quad 0 = \tau(A(s, 11)) + \tau(A(s, 100)) + \tau(A(s, 111)),$$

$$(2.22) \quad 0 = \tau(A(s, \epsilon)) + \tau(A(s, 100)) + \tau(A(s, 101)) + \tau(A(s, 1000)),$$

$$(2.23) \quad 0 = \tau(A(s, 1)) + \tau(A(s, 101)) + \tau(A(s, 110)) + \tau(A(s, 1001)),$$

$$0 = \tau(A(s, 10)) + \tau(A(s, 11)) + \tau(A(s, 100)) + \tau(A(s, 110))$$

$$(2.24) \quad + \tau(A(s, 1010)),$$

$$(2.25) \quad 0 = \tau(A(s, 101)) + \tau(A(s, 1011)),$$

$$(2.26) \quad 0 = \tau(A(s, \epsilon)) + \tau(A(s, 110)) + \tau(A(s, 1100)),$$

$$(2.27) \quad 0 = \tau(A(s, 1)) + \tau(A(s, 11)) + \tau(A(s, 100)) + \tau(A(s, 1101)),$$

for all $s \in E_{2k}$, and

$$(2.28) \quad 0 = \tau(A(s, 11)) + \tau(A(s, 100)) + \tau(A(s, 111)),$$

$$(2.29) \quad 0 = \tau(A(s, \epsilon)) + \tau(A(s, 100)) + \tau(A(s, 101)) + \tau(A(s, 1000)),$$

$$(2.30) \quad 0 = \tau(A(s, 1)) + \tau(A(s, 101)) + \tau(A(s, 110)) + \tau(A(s, 1001)),$$

$$0 = \tau(A(s, 10)) + \tau(A(s, 11)) + \tau(A(s, 100)) + \tau(A(s, 110))$$

$$(2.31) \quad + \tau(A(s, 1010)),$$

$$(2.32) \quad 0 = \tau(A(s, 101)) + \tau(A(s, 1011)),$$

$$(2.33) \quad 0 = \tau(A(s, \epsilon)) + \tau(A(s, 110)) + \tau(A(s, 1100)),$$

$$(2.34) \quad 0 = \tau(A(s, 1)) + \tau(A(s, 11)) + \tau(A(s, 100)) + \tau(A(s, 1101)),$$

for $s = A(i, 0^{2k})$. We find that $(A(i, 0^{62}), E_{62}) = (A(i, 0^{38}), E_{38})$, so that we only have to verify that identities (2.21) through (2.34) hold for $2 \leq k \leq 31$, which turns out to be true. $\square$

In the following lemma, we express M_{2k} , M_{2k+1} , W_{2k} , and W_{2k+1} in terms of M^e , M^o , W^e , and W^o .

Lemma 2.3. *For all integer $k \geq 2$, and $u = 2^{2k-1}$,*

$$M_{2k} = M^e[:7u] + x^{3u}M^e[:4u] + x^{4u}M^e[:3u] + x^{7u}R^e,$$

$$W_{2k} = W^e[:7u] + x^{3u}W^e[:4u] + x^{4u}W^e[:3u] + x^{7u}R^e.$$

For all integer $k \geq 2$, and $u = 2^{2k}$,

$$M_{2k+1} = M^o[:7u] + x^{3u}M^o[:4u] + x^{4u}M^o[:3u] + x^{7u}R^o,$$

$$W_{2k+1} = W^o[:7u] + x^{3u}W^o[:4u] + x^{4u}W^o[:3u] + x^{7u}R^o.$$

Proof. We call the four identities in Lemma 2.3 also by the name M_{2k} , W_{2k} , M_{2k+1} , and W_{2k+1} . For $n = 2$, the identities can be verified directly. For $n \geq 2$, we claim that

$$\begin{aligned} M_{2k} \wedge W_{2k} &\Rightarrow M_{2k+1} \wedge W_{2k+1}, \\ M_{2k+1} \wedge W_{2k+1} &\Rightarrow M_{2k+2} \wedge W_{2k+2}. \end{aligned}$$

We give the proof of

$$M_{2k} \wedge W_{2k} \Rightarrow M_{2k+1},$$

the other ones being similar. Set $u = 2^{2k}$ and $v = 2^{2k-1}$. By definition and induction hypothesis, the left side of identity M_{2k+1} is equal to

$$\begin{aligned} (2.35) \quad W_{2k}M_{2k} &= (W^e[:7v] + x^{3v}W^e[:4v] + x^{4v}W^e[:3v] + x^{7v}R^e) \times (M^e[:7v] \\ &\quad + x^{3v}M^e[:4v] + x^{4v}M^e[:3v] + x^{7v}R^e); \end{aligned}$$

Call this expression *lhs*. Note that both sides of identity M_{2k+1} have the same term of highest degree $x^{14v}R^o$. Therefore we only need to prove that their difference is $O(x^{14v})$. Using Lemma 2.1 it can be seen that the right side of identity M_{2k+1} is congruent, modulo x^{14v} , to

$$W^e[:14v]M^e[:14v] + x^{6v}W^e[:8v]M^e[:8v] + x^{8v}W^e[:6v]M^e[:6v].$$

For all $n \leq 14$, replace the occurrences of $W^e[:n \cdot v]$ and $M^e[:n \cdot v]$ in the above expression by the reduction modulo $x^{n \cdot v}$ of the right side of the corresponding identity in Lemma 2.2 and get a new expression, which we call *rhs*. Define

$$\begin{aligned} X &:= x^v, \\ a_n &:= W^e[n \cdot v : (n+1) \cdot v] / X^n, \\ b_n &:= M^e[n \cdot v : (n+1) \cdot v] / X^n, \\ c &:= R^e. \end{aligned}$$

Using the notation introduced above, we can represent the expressions *lhs* (2.35) and *rhs* as polynomials in $\mathbb{F}_2[a_1, \dots, a_{14}, b_1, \dots, b_{14}, c][X]$. Note that it is not a problem that a_j commutes with b_k while W^e does not commute with M^e , because in the expressions concerned, the products of W^e -terms and M^e -terms are always in the same order. We let the computer do the simplification and check that the difference between these two polynomials is indeed $O(X^{14})$, which completes the proof. $\square$

Proof of Theorem 1.1. We prove the theorem for $\text{CF}(a, b)$; for $\text{CF}(b, a)$, the proof is similar. By Lemma 2.3, we have For all $0 \leq j, k \leq 1$,

$$\begin{aligned} \lim_{n \rightarrow \infty} M_{2n,j,k} &= M_{j,k}^e, \\ \lim_{n \rightarrow \infty} M_{2n+1,j,k} &= M_{j,k}^o, \end{aligned}$$

$$\lim_{n \rightarrow \infty} W_{2n,j,k} = W_{j,k}^e,$$

$$\lim_{n \rightarrow \infty} W_{2n+1,j,k} = W_{j,k}^o.$$

Let $z = 1/x$. By the convergence theorem and identity (2.2),

$$\text{CF}(a, b) = \frac{M_{0,1}^e(x)}{M_{0,0}^e(x)}.$$

By definition, $\phi(M^e, 0, 1)$ and $\phi(M^e, 0, 0)$ are minimal polynomials of $M_{0,1}^e$ and $M_{0,0}^e$. Therefore

$$P(x, y) = \text{Res}_t (\phi(M^e, 0, 1)(x, t), y^{12} \phi(M^e, 0, 1)(x, t/y))$$

is an annihilating polynomial of $f(x) = M_{0,1}^e/M_{0,0}^e$.

Define

$$Q(x, y) = q_4(x)y^4 + q_3(x)y^3 + q_2(x)y^2 + q_1(x)y + q_0(x),$$

where

$$\begin{aligned} q_0(x) &= x^{28} + x^{27} + x^{19} + x^{18} + x^{17} + x^{14} + x^{13} + x^{12} + x^{11} + x^{10} + x^7 + x^4, \\ q_1(x) &= x^{27} + x^{26} + x^{25} + x^{21} + x^{18} + x^{16} + x^{12} + x^{11} + x^{10} + x^6 + x^3 + x, \\ q_2(x) &= x^{26} + x^{14} + x^{10} + x^8 + x^2 + 1, \\ q_3(x) &= x^{27} + x^{26} + x^{25} + x^{21} + x^{18} + x^{16} + x^{12} + x^{11} + x^{10} + x^6 + x^3 + x, \\ q_4(x) &= x^{27} + x^{26} + x^{24} + x^{19} + x^{18} + x^{17} + x^{13} + x^{12} + x^{11} + x^7 + x^2. \end{aligned}$$

The polynomial $Q(x, y)$ is the candidate for the minimal polynomial of $f(x)$ found by Padé-Hermite approximation. To prove that it is indeed the minimal polynomial of $f(x)$, we only need to prove that it is an irreducible factor of $P(x, y)$ of multiplicity m and $R(x, y) := P(x, y)/Q(x, y)^m$ is not an annihilating polynomial of $f(x)$. We verify the first point directly. For the second point, we find that when we truncate $f(x)$ to order 216, and substitute it for y in $R(z, y)$, we get a series with valuation smaller than 216, which proves that $R(z, y)$ is not an annihilating polynomial of $f(x)$. Finally, $z^{12}Q(1/z, y)$ is the minimal polynomial of $\text{CF}(a, b) = f(1/z)$. $\square$

3. ANNEXE

All 16 polynomials are of the form

$$p_0(x) + p_3(x)y^3 + p_6(x)y^6 + p_9(x)y^9 + p_{12}(x)y^{12}.$$

The coefficients $p_j(x)$ and the 16 initial terms to determine the solutions uniquely are given below.

For $\phi(M^e, 0, 0)$:

$$\begin{aligned} p_0(x) &= x^{162} + x^{160} + x^{158} + x^{152} + x^{150} + x^{148} + x^{146} + x^{140} + x^{138} + x^{122} \\ &\quad + x^{120} + x^{116} + x^{114} + x^{110} + x^{106} + x^{102} + x^{98} + x^{96} + x^{90} + x^{88} \\ &\quad + x^{86} + x^{84} + x^{80} + x^{76} + x^{68} + x^{66} + x^{64} + x^{62} + x^{60} + x^{58} + x^{54} \\ &\quad + x^{50} + x^{48} + x^{46} + x^{44} + x^{34} + x^{30} + x^{22} + x^{12}, \\ p_3(x) &= x^{158} + x^{156} + x^{148} + x^{146} + x^{144} + x^{140} + x^{128} + x^{124} + x^{120} + x^{118} \\ &\quad + x^{116} + x^{114} + x^{112} + x^{104} + x^{100} + x^{98} + x^{96} + x^{94} + x^{92} + x^{90} \\ &\quad + x^{86} + x^{74} + x^{72} + x^{68} + x^{64} + x^{60} + x^{58} + x^{54} + x^{50} + x^{42} + x^{40} \end{aligned}$$

$$\begin{aligned}
& + x^{38} + x^{34} + x^{32} + x^{30} + x^{28} + x^{26} + x^{24} + x^{22} + x^8, \\
p_6(x) &= x^{154} + x^{152} + x^{150} + x^{148} + x^{144} + x^{142} + x^{136} + x^{132} + x^{130} + x^{124} \\
& + x^{120} + x^{114} + x^{112} + x^{110} + x^{104} + x^{102} + x^{100} + x^{96} + x^{94} + x^{92} \\
& + x^{86} + x^{82} + x^{76} + x^{66} + x^{64} + x^{62} + x^{56} + x^{50} + x^{48} + x^{46} + x^{44} \\
& + x^{42} + x^{40} + x^{36} + x^{34} + x^{30} + x^{20} + x^{14} + x^{10} + x^4 + x^2 + 1, \\
p_9(x) &= x^{160} + x^{158} + x^{154} + x^{152} + x^{146} + x^{140} + x^{136} + x^{132} + x^{128} + x^{126} \\
& + x^{116} + x^{108} + x^{104} + x^{98} + x^{96} + x^{94} + x^{92} + x^{90} + x^{88} + x^{86} + x^{84} \\
& + x^{78} + x^{76} + x^{74} + x^{72} + x^{68} + x^{62} + x^{56} + x^{52} + x^{46} + x^{44} + x^{38} \\
& + x^{36} + x^{34} + x^{30} + x^{28} + x^{24} + x^{22} + x^{20} + x^{16} + x^{14} + x^{10} + x^8 \\
& + x^6 + x^4 + x^2, \\
p_{12}(x) &= x^{160} + x^{152} + x^{120} + x^{96} + x^{80} + x^{72} + x^{48} + x^{32} + x^{24} + 1,
\end{aligned}$$

and the initial terms are $[1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0]$.

For $\phi(M^e, 0, 1)$:

$$\begin{aligned}
p_0(x) &= x^{147} + x^{146} + x^{144} + x^{142} + x^{141} + x^{140} + x^{139} + x^{136} + x^{134} + x^{133} \\
& + x^{132} + x^{130} + x^{126} + x^{123} + x^{121} + x^{120} + x^{116} + x^{115} + x^{114} \\
& + x^{113} + x^{111} + x^{109} + x^{108} + x^{104} + x^{102} + x^{100} + x^{99} + x^{97} + x^{96} \\
& + x^{95} + x^{93} + x^{91} + x^{90} + x^{88} + x^{87} + x^{85} + x^{84} + x^{83} + x^{82} + x^{78} \\
& + x^{77} + x^{76} + x^{75} + x^{71} + x^{69} + x^{68} + x^{67} + x^{65} + x^{62} + x^{61} + x^{59} \\
& + x^{58} + x^{57} + x^{56} + x^{53} + x^{52} + x^{49} + x^{47} + x^{46} + x^{43} + x^{41} + x^{40} \\
& + x^{39} + x^{38} + x^{37} + x^{33} + x^{30} + x^{26} + x^{25} + x^{23} + x^{22} + x^{20} + x^{18}, \\
p_3(x) &= x^{145} + x^{143} + x^{142} + x^{141} + x^{139} + x^{137} + x^{135} + x^{134} + x^{130} + x^{129} \\
& + x^{124} + x^{122} + x^{119} + x^{117} + x^{115} + x^{114} + x^{113} + x^{111} + x^{105} \\
& + x^{102} + x^{100} + x^{97} + x^{89} + x^{87} + x^{86} + x^{85} + x^{83} + x^{77} + x^{75} + x^{74} \\
& + x^{73} + x^{69} + x^{68} + x^{67} + x^{62} + x^{61} + x^{60} + x^{59} + x^{58} + x^{57} + x^{55} \\
& + x^{54} + x^{52} + x^{49} + x^{47} + x^{45} + x^{44} + x^{43} + x^{39} + x^{38} + x^{34} + x^{31} \\
& + x^{30} + x^{29} + x^{28} + x^{27} + x^{26} + x^{23} + x^{17} + x^{14} + x^{12} + x^9, \\
p_6(x) &= x^{144} + x^{143} + x^{140} + x^{138} + x^{137} + x^{134} + x^{130} + x^{129} + x^{126} + x^{122} \\
& + x^{121} + x^{118} + x^{112} + x^{111} + x^{108} + x^{102} + x^{101} + x^{100} + x^{99} + x^{98} \\
& + x^{96} + x^{94} + x^{93} + x^{90} + x^{84} + x^{83} + x^{82} + x^{81} + x^{79} + x^{77} + x^{76} \\
& + x^{73} + x^{72} + x^{71} + x^{70} + x^{67} + x^{66} + x^{65} + x^{63} + x^{62} + x^{60} + x^{58} \\
& + x^{57} + x^{53} + x^{50} + x^{46} + x^{45} + x^{41} + x^{40} + x^{39} + x^{37} + x^{35} + x^{34} \\
& + x^{31} + x^{27} + x^{23} + x^{19} + x^{15} + x^{14} + x^{13} + x^{11} + x^9 + x^8 + x^6, \\
p_9(x) &= x^{143} + x^{140} + x^{139} + x^{138} + x^{137} + x^{136} + x^{135} + x^{133} + x^{132} + x^{131} \\
& + x^{130} + x^{128} + x^{127} + x^{126} + x^{125} + x^{122} + x^{118} + x^{115} + x^{114} \\
& + x^{112} + x^{111} + x^{109} + x^{108} + x^{107} + x^{106} + x^{105} + x^{104} + x^{103}
\end{aligned}$$

$$\begin{aligned}
& + x^{101} + x^{100} + x^{99} + x^{98} + x^{96} + x^{95} + x^{94} + x^{89} + x^{88} + x^{85} + x^{84} \\
& + x^{82} + x^{81} + x^{78} + x^{77} + x^{75} + x^{69} + x^{67} + x^{66} + x^{65} + x^{60} + x^{58} \\
& + x^{55} + x^{49} + x^{46} + x^{44} + x^{43} + x^{41} + x^{40} + x^{38} + x^{37} + x^{35} + x^{34} \\
& + x^{33} + x^{32} + x^{30} + x^{29} + x^{28} + x^{25} + x^{23} + x^{20} + x^{19} + x^{18} + x^{17} \\
& + x^{16} + x^{15} + x^{13} + x^{12} + x^{11} + x^{10} + x^8 + x^7 + x^6 + x^3, \\
p_{12}(x) = & x^{142} + x^{141} + x^{140} + x^{139} + x^{137} + x^{135} + x^{133} + x^{131} + x^{129} + x^{127} \\
& + x^{126} + x^{124} + x^{122} + x^{121} + x^{120} + x^{119} + x^{118} + x^{116} + x^{114} \\
& + x^{113} + x^{112} + x^{111} + x^{109} + x^{107} + x^{106} + x^{104} + x^{102} + x^{101} \\
& + x^{100} + x^{99} + x^{98} + x^{96} + x^{62} + x^{61} + x^{60} + x^{59} + x^{57} + x^{55} + x^{53} \\
& + x^{51} + x^{49} + x^{47} + x^{46} + x^{44} + x^{42} + x^{41} + x^{40} + x^{39} + x^{38} + x^{36} \\
& + x^{34} + x^{33} + x^{32} + x^{31} + x^{30} + x^{28} + x^{26} + x^{25} + x^{24} + x^{23} + x^{22} \\
& + x^{20} + x^{18} + x^{17} + x^{16} + x^{15} + x^{13} + x^{11} + x^{10} + x^8 + x^6 + x^5 + x^4 \\
& + x^3 + x^2 + 1,
\end{aligned}$$

and the initial terms are $[0, 1, 0, 0, 0, 1, 0, 0, 1, 0, 1, 1, 1, 0, 0, 0]$.

For $\phi(M^e, 1, 0)$:

$$\begin{aligned}
p_0(x) = & x^{147} + x^{146} + x^{144} + x^{142} + x^{141} + x^{140} + x^{139} + x^{136} + x^{134} + x^{133} \\
& + x^{132} + x^{130} + x^{126} + x^{123} + x^{121} + x^{120} + x^{116} + x^{115} + x^{114} \\
& + x^{113} + x^{111} + x^{109} + x^{108} + x^{104} + x^{102} + x^{100} + x^{99} + x^{97} + x^{96} \\
& + x^{95} + x^{93} + x^{91} + x^{90} + x^{88} + x^{87} + x^{85} + x^{84} + x^{83} + x^{82} + x^{78} \\
& + x^{77} + x^{76} + x^{75} + x^{71} + x^{69} + x^{68} + x^{67} + x^{65} + x^{62} + x^{61} + x^{59} \\
& + x^{58} + x^{57} + x^{56} + x^{53} + x^{52} + x^{49} + x^{47} + x^{46} + x^{43} + x^{41} + x^{40} \\
& + x^{39} + x^{38} + x^{37} + x^{33} + x^{30} + x^{26} + x^{25} + x^{23} + x^{22} + x^{20} + x^{18}, \\
p_3(x) = & x^{145} + x^{143} + x^{142} + x^{141} + x^{139} + x^{137} + x^{135} + x^{134} + x^{130} + x^{129} \\
& + x^{124} + x^{122} + x^{119} + x^{117} + x^{115} + x^{114} + x^{113} + x^{111} + x^{105} \\
& + x^{102} + x^{100} + x^{97} + x^{89} + x^{87} + x^{86} + x^{85} + x^{83} + x^{77} + x^{75} + x^{74} \\
& + x^{73} + x^{69} + x^{68} + x^{67} + x^{62} + x^{61} + x^{60} + x^{59} + x^{58} + x^{57} + x^{55} \\
& + x^{54} + x^{52} + x^{49} + x^{47} + x^{45} + x^{44} + x^{43} + x^{39} + x^{38} + x^{34} + x^{31} \\
& + x^{30} + x^{29} + x^{28} + x^{27} + x^{26} + x^{23} + x^{17} + x^{14} + x^{12} + x^9, \\
p_6(x) = & x^{144} + x^{143} + x^{140} + x^{138} + x^{137} + x^{134} + x^{130} + x^{129} + x^{126} + x^{122} \\
& + x^{121} + x^{118} + x^{112} + x^{111} + x^{108} + x^{102} + x^{101} + x^{100} + x^{99} + x^{98} \\
& + x^{96} + x^{94} + x^{93} + x^{90} + x^{84} + x^{83} + x^{82} + x^{81} + x^{79} + x^{77} + x^{76} \\
& + x^{73} + x^{72} + x^{71} + x^{70} + x^{67} + x^{66} + x^{65} + x^{63} + x^{62} + x^{60} + x^{58} \\
& + x^{57} + x^{53} + x^{50} + x^{46} + x^{45} + x^{41} + x^{40} + x^{39} + x^{37} + x^{35} + x^{34} \\
& + x^{31} + x^{27} + x^{23} + x^{19} + x^{15} + x^{14} + x^{13} + x^{11} + x^9 + x^8 + x^6, \\
p_9(x) = & x^{143} + x^{140} + x^{139} + x^{138} + x^{137} + x^{136} + x^{135} + x^{133} + x^{132} + x^{131}
\end{aligned}$$

$$\begin{aligned}
& + x^{130} + x^{128} + x^{127} + x^{126} + x^{125} + x^{122} + x^{118} + x^{115} + x^{114} \\
& + x^{112} + x^{111} + x^{109} + x^{108} + x^{107} + x^{106} + x^{105} + x^{104} + x^{103} \\
& + x^{101} + x^{100} + x^{99} + x^{98} + x^{96} + x^{95} + x^{94} + x^{89} + x^{88} + x^{85} + x^{84} \\
& + x^{82} + x^{81} + x^{78} + x^{77} + x^{75} + x^{69} + x^{67} + x^{66} + x^{65} + x^{60} + x^{58} \\
& + x^{55} + x^{49} + x^{46} + x^{44} + x^{43} + x^{41} + x^{40} + x^{38} + x^{37} + x^{35} + x^{34} \\
& + x^{33} + x^{32} + x^{30} + x^{29} + x^{28} + x^{25} + x^{23} + x^{20} + x^{19} + x^{18} + x^{17} \\
& + x^{16} + x^{15} + x^{13} + x^{12} + x^{11} + x^{10} + x^8 + x^7 + x^6 + x^3, \\
p_{12}(x) = & x^{142} + x^{141} + x^{140} + x^{139} + x^{137} + x^{135} + x^{133} + x^{131} + x^{129} + x^{127} \\
& + x^{126} + x^{124} + x^{122} + x^{121} + x^{120} + x^{119} + x^{118} + x^{116} + x^{114} \\
& + x^{113} + x^{112} + x^{111} + x^{109} + x^{107} + x^{106} + x^{104} + x^{102} + x^{101} \\
& + x^{100} + x^{99} + x^{98} + x^{96} + x^{62} + x^{61} + x^{60} + x^{59} + x^{57} + x^{55} + x^{53} \\
& + x^{51} + x^{49} + x^{47} + x^{46} + x^{44} + x^{42} + x^{41} + x^{40} + x^{39} + x^{38} + x^{36} \\
& + x^{34} + x^{33} + x^{32} + x^{31} + x^{30} + x^{28} + x^{26} + x^{25} + x^{24} + x^{23} + x^{22} \\
& + x^{20} + x^{18} + x^{17} + x^{16} + x^{15} + x^{13} + x^{11} + x^{10} + x^8 + x^6 + x^5 + x^4 \\
& + x^3 + x^2 + 1,
\end{aligned}$$

and the initial terms are $[0, 1, 0, 0, 0, 1, 0, 0, 1, 0, 1, 1, 1, 0, 0, 0]$.

For $\phi(M^e, 1, 1)$:

$$\begin{aligned}
p_0(x) = & x^{132} + x^{128} + x^{124} + x^{122} + x^{116} + x^{114} + x^{112} + x^{102} + x^{98} + x^{90} \\
& + x^{88} + x^{84} + x^{82} + x^{74} + x^{72} + x^{64} + x^{60} + x^{58} + x^{56} + x^{50} + x^{48} \\
& + x^{40} + x^{32} + x^{28} + x^{24}, \\
p_3(x) = & x^{126} + x^{122} + x^{120} + x^{116} + x^{108} + x^{106} + x^{104} + x^{100} + x^{98} + x^{84} \\
& + x^{76} + x^{74} + x^{68} + x^{66} + x^{62} + x^{40} + x^{38} + x^{36} + x^{30} + x^{26} + x^{24} \\
& + x^{18} + x^8 + x^6, \\
p_6(x) = & x^{126} + x^{124} + x^{122} + x^{120} + x^{118} + x^{116} + x^{114} + x^{112} + x^{110} + x^{104} \\
& + x^{98} + x^{96} + x^{94} + x^{92} + x^{82} + x^{76} + x^{72} + x^{68} + x^{66} + x^{64} + x^{62} \\
& + x^{60} + x^{54} + x^{50} + x^{44} + x^{42} + x^{40} + x^{38} + x^{36} + x^{30} + x^{26} + x^{22} \\
& + x^{20} + x^{18} + x^{14} + x^{12} + x^{10} + x^8 + x^6 + x^4 + x^2 + 1, \\
p_9(x) = & x^{124} + x^{118} + x^{116} + x^{114} + x^{112} + x^{110} + x^{106} + x^{98} + x^{88} + x^{78} \\
& + x^{74} + x^{72} + x^{70} + x^{66} + x^{64} + x^{62} + x^{52} + x^{50} + x^{44} + x^{42} + x^{40} \\
& + x^{36} + x^{34} + x^{26} + x^{24} + x^{18} + x^{16} + x^8 + x^4 + x^2, \\
p_{12}(x) = & x^{124} + x^{122} + x^{120} + x^{118} + x^{116} + x^{112} + x^{108} + x^{106} + x^{104} + x^{102} \\
& + x^{100} + x^{96} + x^{44} + x^{42} + x^{40} + x^{38} + x^{36} + x^{32} + x^{28} + x^{26} + x^{24} \\
& + x^{22} + x^{20} + x^{16} + x^{12} + x^{10} + x^8 + x^6 + x^4 + 1,
\end{aligned}$$

and the initial terms are $[0, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0]$.

For $\phi(W^e, 0, 0)$:

$$\begin{aligned}
p_0(x) &= x^{132} + x^{126} + x^{124} + x^{118} + x^{116} + x^{114} + x^{112} + x^{110} + x^{108} + x^{104} \\
&\quad + x^{102} + x^{92} + x^{90} + x^{84} + x^{80} + x^{74} + x^{72} + x^{52} + x^{50} + x^{44} + x^{42} \\
&\quad + x^{36} + x^{30} + x^{28} + x^{26} + x^{22} + x^{20} + x^{18} + x^{12}, \\
p_3(x) &= x^{126} + x^{120} + x^{114} + x^{112} + x^{110} + x^{106} + x^{104} + x^{102} + x^{100} + x^{94} \\
&\quad + x^{92} + x^{90} + x^{84} + x^{82} + x^{80} + x^{76} + x^{74} + x^{72} + x^{70} + x^{68} + x^{56} \\
&\quad + x^{54} + x^{52} + x^{50} + x^{48} + x^{42} + x^{40} + x^{36} + x^{34} + x^{32} + x^{26} + x^{24} \\
&\quad + x^{22} + x^{20} + x^{18} + x^{12} + x^{10} + x^8, \\
p_6(x) &= x^{126} + x^{124} + x^{112} + x^{106} + x^{104} + x^{102} + x^{100} + x^{94} + x^{92} + x^{88} \\
&\quad + x^{82} + x^{78} + x^{76} + x^{74} + x^{58} + x^{56} + x^{46} + x^{44} + x^{30} + x^{28} + x^{26} \\
&\quad + x^{22} + x^{20} + x^{10} + x^2 + 1, \\
p_9(x) &= x^{124} + x^{118} + x^{116} + x^{114} + x^{112} + x^{110} + x^{106} + x^{98} + x^{88} + x^{78} \\
&\quad + x^{74} + x^{72} + x^{70} + x^{66} + x^{64} + x^{62} + x^{52} + x^{50} + x^{44} + x^{42} + x^{40} \\
&\quad + x^{36} + x^{34} + x^{26} + x^{24} + x^{18} + x^{16} + x^8 + x^4 + x^2, \\
p_{12}(x) &= x^{124} + x^{122} + x^{120} + x^{118} + x^{116} + x^{112} + x^{108} + x^{106} + x^{104} + x^{102} \\
&\quad + x^{100} + x^{96} + x^{44} + x^{42} + x^{40} + x^{38} + x^{36} + x^{32} + x^{28} + x^{26} + x^{24} \\
&\quad + x^{22} + x^{20} + x^{16} + x^{12} + x^{10} + x^8 + x^6 + x^4 + 1,
\end{aligned}$$

and the initial terms are $[1, 0, 1, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0]$.

For $\phi(W^e, 0, 1)$:

$$\begin{aligned}
p_0(x) &= x^{147} + x^{144} + x^{143} + x^{137} + x^{135} + x^{134} + x^{128} + x^{127} + x^{126} + x^{122} \\
&\quad + x^{121} + x^{119} + x^{116} + x^{114} + x^{112} + x^{110} + x^{109} + x^{107} + x^{106} \\
&\quad + x^{104} + x^{101} + x^{100} + x^{98} + x^{97} + x^{96} + x^{92} + x^{91} + x^{90} + x^{89} + x^{86} \\
&\quad + x^{85} + x^{84} + x^{83} + x^{82} + x^{81} + x^{80} + x^{77} + x^{76} + x^{75} + x^{71} + x^{70} \\
&\quad + x^{69} + x^{66} + x^{63} + x^{61} + x^{60} + x^{59} + x^{58} + x^{53} + x^{52} + x^{49} + x^{47} \\
&\quad + x^{45} + x^{42} + x^{41} + x^{39} + x^{33} + x^{32} + x^{27}, \\
p_3(x) &= x^{145} + x^{143} + x^{142} + x^{141} + x^{139} + x^{137} + x^{135} + x^{134} + x^{130} + x^{129} \\
&\quad + x^{124} + x^{122} + x^{119} + x^{117} + x^{115} + x^{114} + x^{113} + x^{111} + x^{105} \\
&\quad + x^{102} + x^{100} + x^{97} + x^{89} + x^{87} + x^{86} + x^{85} + x^{83} + x^{77} + x^{75} + x^{74} \\
&\quad + x^{73} + x^{69} + x^{68} + x^{67} + x^{62} + x^{61} + x^{60} + x^{59} + x^{58} + x^{57} + x^{55} \\
&\quad + x^{54} + x^{52} + x^{49} + x^{47} + x^{45} + x^{44} + x^{43} + x^{39} + x^{38} + x^{34} + x^{31} \\
&\quad + x^{30} + x^{29} + x^{28} + x^{27} + x^{26} + x^{23} + x^{17} + x^{14} + x^{12} + x^9, \\
p_6(x) &= x^{144} + x^{143} + x^{140} + x^{138} + x^{137} + x^{134} + x^{130} + x^{129} + x^{126} + x^{122} \\
&\quad + x^{121} + x^{118} + x^{112} + x^{111} + x^{108} + x^{102} + x^{101} + x^{100} + x^{99} + x^{98} \\
&\quad + x^{96} + x^{94} + x^{93} + x^{90} + x^{84} + x^{83} + x^{82} + x^{81} + x^{79} + x^{77} + x^{76} \\
&\quad + x^{73} + x^{72} + x^{71} + x^{70} + x^{67} + x^{66} + x^{65} + x^{63} + x^{62} + x^{60} + x^{58}
\end{aligned}$$

$$\begin{aligned}
& + x^{57} + x^{53} + x^{50} + x^{46} + x^{45} + x^{41} + x^{40} + x^{39} + x^{37} + x^{35} + x^{34} \\
& + x^{31} + x^{27} + x^{23} + x^{19} + x^{15} + x^{14} + x^{13} + x^{11} + x^9 + x^8 + x^6, \\
p_9(x) = & x^{143} + x^{140} + x^{139} + x^{138} + x^{137} + x^{136} + x^{135} + x^{133} + x^{132} + x^{131} \\
& + x^{130} + x^{128} + x^{127} + x^{126} + x^{125} + x^{122} + x^{118} + x^{115} + x^{114} \\
& + x^{112} + x^{111} + x^{109} + x^{108} + x^{107} + x^{106} + x^{105} + x^{104} + x^{103} \\
& + x^{101} + x^{100} + x^{99} + x^{98} + x^{96} + x^{95} + x^{94} + x^{89} + x^{88} + x^{85} + x^{84} \\
& + x^{82} + x^{81} + x^{78} + x^{77} + x^{75} + x^{69} + x^{67} + x^{66} + x^{65} + x^{60} + x^{58} \\
& + x^{55} + x^{49} + x^{46} + x^{44} + x^{43} + x^{41} + x^{40} + x^{38} + x^{37} + x^{35} + x^{34} \\
& + x^{33} + x^{32} + x^{30} + x^{29} + x^{28} + x^{25} + x^{23} + x^{20} + x^{19} + x^{18} + x^{17} \\
& + x^{16} + x^{15} + x^{13} + x^{12} + x^{11} + x^{10} + x^8 + x^7 + x^6 + x^3, \\
p_{12}(x) = & x^{142} + x^{141} + x^{140} + x^{139} + x^{137} + x^{135} + x^{133} + x^{131} + x^{129} + x^{127} \\
& + x^{126} + x^{124} + x^{122} + x^{121} + x^{120} + x^{119} + x^{118} + x^{116} + x^{114} \\
& + x^{113} + x^{112} + x^{111} + x^{109} + x^{107} + x^{106} + x^{104} + x^{102} + x^{101} \\
& + x^{100} + x^{99} + x^{98} + x^{96} + x^{62} + x^{61} + x^{60} + x^{59} + x^{57} + x^{55} + x^{53} \\
& + x^{51} + x^{49} + x^{47} + x^{46} + x^{44} + x^{42} + x^{41} + x^{40} + x^{39} + x^{38} + x^{36} \\
& + x^{34} + x^{33} + x^{32} + x^{31} + x^{30} + x^{28} + x^{26} + x^{25} + x^{24} + x^{23} + x^{22} \\
& + x^{20} + x^{18} + x^{17} + x^{16} + x^{15} + x^{13} + x^{11} + x^{10} + x^8 + x^6 + x^5 + x^4 \\
& + x^3 + x^2 + 1,
\end{aligned}$$

and the initial terms are $[0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 1, 0, 0, 1]$.

For $\phi(W^e, 1, 0)$:

$$\begin{aligned}
p_0(x) = & x^{147} + x^{144} + x^{143} + x^{137} + x^{135} + x^{134} + x^{128} + x^{127} + x^{126} + x^{122} \\
& + x^{121} + x^{119} + x^{116} + x^{114} + x^{112} + x^{110} + x^{109} + x^{107} + x^{106} \\
& + x^{104} + x^{101} + x^{100} + x^{98} + x^{97} + x^{96} + x^{92} + x^{91} + x^{90} + x^{89} + x^{86} \\
& + x^{85} + x^{84} + x^{83} + x^{82} + x^{81} + x^{80} + x^{77} + x^{76} + x^{75} + x^{71} + x^{70} \\
& + x^{69} + x^{66} + x^{63} + x^{61} + x^{60} + x^{59} + x^{58} + x^{53} + x^{52} + x^{49} + x^{47} \\
& + x^{45} + x^{42} + x^{41} + x^{39} + x^{33} + x^{32} + x^{27}, \\
p_3(x) = & x^{145} + x^{143} + x^{142} + x^{141} + x^{139} + x^{137} + x^{135} + x^{134} + x^{130} + x^{129} \\
& + x^{124} + x^{122} + x^{119} + x^{117} + x^{115} + x^{114} + x^{113} + x^{111} + x^{105} \\
& + x^{102} + x^{100} + x^{97} + x^{89} + x^{87} + x^{86} + x^{85} + x^{83} + x^{77} + x^{75} + x^{74} \\
& + x^{73} + x^{69} + x^{68} + x^{67} + x^{62} + x^{61} + x^{60} + x^{59} + x^{58} + x^{57} + x^{55} \\
& + x^{54} + x^{52} + x^{49} + x^{47} + x^{45} + x^{44} + x^{43} + x^{39} + x^{38} + x^{34} + x^{31} \\
& + x^{30} + x^{29} + x^{28} + x^{27} + x^{26} + x^{23} + x^{17} + x^{14} + x^{12} + x^9, \\
p_6(x) = & x^{144} + x^{143} + x^{140} + x^{138} + x^{137} + x^{134} + x^{130} + x^{129} + x^{126} + x^{122} \\
& + x^{121} + x^{118} + x^{112} + x^{111} + x^{108} + x^{102} + x^{101} + x^{100} + x^{99} + x^{98} \\
& + x^{96} + x^{94} + x^{93} + x^{90} + x^{84} + x^{83} + x^{82} + x^{81} + x^{79} + x^{77} + x^{76}
\end{aligned}$$

$$\begin{aligned}
& + x^{73} + x^{72} + x^{71} + x^{70} + x^{67} + x^{66} + x^{65} + x^{63} + x^{62} + x^{60} + x^{58} \\
& + x^{57} + x^{53} + x^{50} + x^{46} + x^{45} + x^{41} + x^{40} + x^{39} + x^{37} + x^{35} + x^{34} \\
& + x^{31} + x^{27} + x^{23} + x^{19} + x^{15} + x^{14} + x^{13} + x^{11} + x^9 + x^8 + x^6, \\
p_9(x) = & x^{143} + x^{140} + x^{139} + x^{138} + x^{137} + x^{136} + x^{135} + x^{133} + x^{132} + x^{131} \\
& + x^{130} + x^{128} + x^{127} + x^{126} + x^{125} + x^{122} + x^{118} + x^{115} + x^{114} \\
& + x^{112} + x^{111} + x^{109} + x^{108} + x^{107} + x^{106} + x^{105} + x^{104} + x^{103} \\
& + x^{101} + x^{100} + x^{99} + x^{98} + x^{96} + x^{95} + x^{94} + x^{89} + x^{88} + x^{85} + x^{84} \\
& + x^{82} + x^{81} + x^{78} + x^{77} + x^{75} + x^{69} + x^{67} + x^{66} + x^{65} + x^{60} + x^{58} \\
& + x^{55} + x^{49} + x^{46} + x^{44} + x^{43} + x^{41} + x^{40} + x^{38} + x^{37} + x^{35} + x^{34} \\
& + x^{33} + x^{32} + x^{30} + x^{29} + x^{28} + x^{25} + x^{23} + x^{20} + x^{19} + x^{18} + x^{17} \\
& + x^{16} + x^{15} + x^{13} + x^{12} + x^{11} + x^{10} + x^8 + x^7 + x^6 + x^3, \\
p_{12}(x) = & x^{142} + x^{141} + x^{140} + x^{139} + x^{137} + x^{135} + x^{133} + x^{131} + x^{129} + x^{127} \\
& + x^{126} + x^{124} + x^{122} + x^{121} + x^{120} + x^{119} + x^{118} + x^{116} + x^{114} \\
& + x^{113} + x^{112} + x^{111} + x^{109} + x^{107} + x^{106} + x^{104} + x^{102} + x^{101} \\
& + x^{100} + x^{99} + x^{98} + x^{96} + x^{62} + x^{61} + x^{60} + x^{59} + x^{57} + x^{55} + x^{53} \\
& + x^{51} + x^{49} + x^{47} + x^{46} + x^{44} + x^{42} + x^{41} + x^{40} + x^{39} + x^{38} + x^{36} \\
& + x^{34} + x^{33} + x^{32} + x^{31} + x^{30} + x^{28} + x^{26} + x^{25} + x^{24} + x^{23} + x^{22} \\
& + x^{20} + x^{18} + x^{17} + x^{16} + x^{15} + x^{13} + x^{11} + x^{10} + x^8 + x^6 + x^5 + x^4 \\
& + x^3 + x^2 + 1,
\end{aligned}$$

and the initial terms are $[0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 1, 0, 0, 1]$.

For $\phi(W^e, 1, 1)$:

$$\begin{aligned}
p_0(x) = & x^{162} + x^{148} + x^{146} + x^{144} + x^{142} + x^{140} + x^{136} + x^{128} + x^{126} + x^{120} \\
& + x^{112} + x^{110} + x^{94} + x^{90} + x^{88} + x^{86} + x^{80} + x^{78} + x^{76} + x^{72} + x^{58} \\
& + x^{56} + x^{50} + x^{48} + x^{42}, \\
p_3(x) = & x^{152} + x^{150} + x^{148} + x^{146} + x^{138} + x^{136} + x^{132} + x^{128} + x^{118} + x^{116} \\
& + x^{114} + x^{112} + x^{108} + x^{102} + x^{100} + x^{98} + x^{92} + x^{86} + x^{78} + x^{68} \\
& + x^{66} + x^{58} + x^{54} + x^{50} + x^{48} + x^{44} + x^{40} + x^{30} + x^{28} + x^{26} + x^{22} \\
& + x^{20} + x^{16} + x^{14} + x^8 + x^6, \\
p_6(x) = & x^{158} + x^{154} + x^{152} + x^{148} + x^{144} + x^{142} + x^{140} + x^{138} + x^{136} + x^{132} \\
& + x^{130} + x^{128} + x^{124} + x^{114} + x^{112} + x^{110} + x^{108} + x^{104} + x^{100} \\
& + x^{96} + x^{90} + x^{86} + x^{82} + x^{80} + x^{78} + x^{74} + x^{72} + x^{68} + x^{62} + x^{60} \\
& + x^{56} + x^{50} + x^{46} + x^{44} + x^{40} + x^{38} + x^{36} + x^{32} + x^{30} + x^{20} + x^{16} \\
& + x^{12} + x^{10} + x^6 + x^2 + 1, \\
p_9(x) = & x^{160} + x^{158} + x^{154} + x^{152} + x^{146} + x^{140} + x^{136} + x^{132} + x^{128} + x^{126} \\
& + x^{116} + x^{108} + x^{104} + x^{98} + x^{96} + x^{94} + x^{92} + x^{90} + x^{88} + x^{86} + x^{84}
\end{aligned}$$

$$\begin{aligned}
& + x^{78} + x^{76} + x^{74} + x^{72} + x^{68} + x^{62} + x^{56} + x^{52} + x^{46} + x^{44} + x^{38} \\
& + x^{36} + x^{34} + x^{30} + x^{28} + x^{24} + x^{22} + x^{20} + x^{16} + x^{14} + x^{10} + x^8 \\
& + x^6 + x^4 + x^2, \\
p_{12}(x) &= x^{160} + x^{152} + x^{120} + x^{96} + x^{80} + x^{72} + x^{48} + x^{32} + x^{24} + 1,
\end{aligned}$$

and the initial terms are $[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0]$.

For $\phi(M^\circ, 0, 0)$:

$$\begin{aligned}
p_0(x) &= x^{147} + x^{146} + x^{145} + x^{144} + x^{142} + x^{138} + x^{137} + x^{131} + x^{130} + x^{128} \\
& + x^{127} + x^{126} + x^{123} + x^{120} + x^{119} + x^{115} + x^{113} + x^{110} + x^{106} \\
& + x^{102} + x^{98} + x^{97} + x^{95} + x^{93} + x^{92} + x^{90} + x^{89} + x^{88} + x^{86} + x^{85} \\
& + x^{84} + x^{82} + x^{79} + x^{78} + x^{76} + x^{75} + x^{71} + x^{70} + x^{69} + x^{68} + x^{62} \\
& + x^{61} + x^{59} + x^{57} + x^{54} + x^{52} + x^{51} + x^{46} + x^{45} + x^{43} + x^{38} + x^{37} \\
& + x^{36} + x^{35} + x^{34} + x^{32} + x^{30} + x^{29} + x^{26} + x^{24} + x^{23} + x^{22} + x^{21} \\
& + x^{19} + x^{16} + x^{15} + x^{12}, \\
p_3(x) &= x^{146} + x^{141} + x^{140} + x^{139} + x^{138} + x^{137} + x^{136} + x^{133} + x^{132} + x^{131} \\
& + x^{130} + x^{129} + x^{128} + x^{127} + x^{126} + x^{125} + x^{117} + x^{116} + x^{115} \\
& + x^{114} + x^{113} + x^{112} + x^{110} + x^{105} + x^{103} + x^{102} + x^{101} + x^{100} \\
& + x^{99} + x^{98} + x^{95} + x^{94} + x^{93} + x^{91} + x^{90} + x^{89} + x^{88} + x^{84} + x^{83} \\
& + x^{80} + x^{78} + x^{76} + x^{75} + x^{73} + x^{70} + x^{68} + x^{65} + x^{63} + x^{62} + x^{56} \\
& + x^{54} + x^{51} + x^{48} + x^{47} + x^{44} + x^{43} + x^{42} + x^{39} + x^{38} + x^{37} + x^{35} \\
& + x^{33} + x^{32} + x^{31} + x^{29} + x^{28} + x^{27} + x^{23} + x^{22} + x^{21} + x^{20} + x^{15} \\
& + x^{14} + x^{12} + x^{11} + x^8, \\
p_6(x) &= x^{146} + x^{137} + x^{134} + x^{132} + x^{131} + x^{130} + x^{128} + x^{127} + x^{123} + x^{121} \\
& + x^{119} + x^{118} + x^{113} + x^{112} + x^{110} + x^{106} + x^{105} + x^{102} + x^{100} \\
& + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{90} + x^{89} + x^{84} + x^{82} + x^{81} + x^{72} \\
& + x^{71} + x^{70} + x^{68} + x^{66} + x^{65} + x^{61} + x^{60} + x^{58} + x^{57} + x^{54} + x^{53} \\
& + x^{49} + x^{47} + x^{44} + x^{42} + x^{41} + x^{40} + x^{38} + x^{35} + x^{33} + x^{32} + x^{27} \\
& + x^{26} + x^{24} + x^{23} + x^{21} + x^{19} + x^{14} + x^{13} + x^{12} + x^{11} + x^8 + x^7 + x^6 \\
& + x^5 + x^3 + x^2 + 1, \\
p_9(x) &= x^{146} + x^{145} + x^{144} + x^{143} + x^{142} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135} \\
& + x^{133} + x^{131} + x^{130} + x^{128} + x^{118} + x^{117} + x^{116} + x^{115} + x^{113} \\
& + x^{111} + x^{110} + x^{108} + x^{106} + x^{105} + x^{104} + x^{103} + x^{102} + x^{100} \\
& + x^{66} + x^{65} + x^{64} + x^{63} + x^{62} + x^{60} + x^{58} + x^{57} + x^{56} + x^{55} + x^{53} \\
& + x^{51} + x^{50} + x^{48} + x^{38} + x^{37} + x^{36} + x^{35} + x^{34} + x^{32} + x^{22} + x^{21} \\
& + x^{20} + x^{19} + x^{17} + x^{15} + x^{14} + x^{12} + x^{10} + x^9 + x^8 + x^7 + x^6 + x^4, \\
p_{12}(x) &= x^{146} + x^{145} + x^{144} + x^{143} + x^{141} + x^{139} + x^{138} + x^{136} + x^{130} + x^{129}
\end{aligned}$$

$$\begin{aligned}
& + x^{128} + x^{127} + x^{126} + x^{124} + x^{122} + x^{121} + x^{120} + x^{119} + x^{117} \\
& + x^{115} + x^{114} + x^{112} + x^{110} + x^{109} + x^{108} + x^{107} + x^{105} + x^{103} \\
& + x^{101} + x^{99} + x^{98} + x^{96} + x^{66} + x^{65} + x^{64} + x^{63} + x^{61} + x^{59} + x^{58} \\
& + x^{56} + x^{50} + x^{49} + x^{48} + x^{47} + x^{46} + x^{44} + x^{42} + x^{41} + x^{40} + x^{39} \\
& + x^{37} + x^{35} + x^{33} + x^{31} + x^{30} + x^{28} + x^{26} + x^{25} + x^{24} + x^{23} + x^{21} \\
& + x^{19} + x^{18} + x^{16} + x^{14} + x^{13} + x^{12} + x^{11} + x^9 + x^7 + x^5 + x^3 + x^2 \\
& + 1,
\end{aligned}$$

and the initial terms are $[1, 0, 1, 0, 0, 0, 0, 1, 1, 0, 0, 1, 1, 1, 1, 0]$.

For $\phi(M^o, 0, 1)$:

$$\begin{aligned}
p_0(x) &= x^{144} + x^{141} + x^{139} + x^{138} + x^{137} + x^{136} + x^{135} + x^{134} + x^{133} + x^{132} \\
& + x^{131} + x^{129} + x^{128} + x^{126} + x^{124} + x^{123} + x^{122} + x^{120} + x^{118} \\
& + x^{117} + x^{116} + x^{114} + x^{112} + x^{111} + x^{110} + x^{107} + x^{106} + x^{104} \\
& + x^{102} + x^{101} + x^{96} + x^{92} + x^{89} + x^{88} + x^{87} + x^{86} + x^{83} + x^{82} + x^{79} \\
& + x^{78} + x^{76} + x^{75} + x^{74} + x^{72} + x^{71} + x^{67} + x^{66} + x^{65} + x^{60} + x^{54} \\
& + x^{53} + x^{51} + x^{46} + x^{43} + x^{42} + x^{41} + x^{40} + x^{39} + x^{38} + x^{37} + x^{36} \\
& + x^{35} + x^{34} + x^{33} + x^{32} + x^{29} + x^{26} + x^{24} + x^{22} + x^{21} + x^{20} + x^{18}, \\
p_3(x) &= x^{137} + x^{136} + x^{135} + x^{133} + x^{132} + x^{128} + x^{127} + x^{126} + x^{125} + x^{123} \\
& + x^{119} + x^{117} + x^{115} + x^{112} + x^{108} + x^{107} + x^{105} + x^{104} + x^{102} \\
& + x^{97} + x^{81} + x^{80} + x^{79} + x^{77} + x^{76} + x^{73} + x^{70} + x^{68} + x^{67} + x^{65} \\
& + x^{63} + x^{62} + x^{61} + x^{60} + x^{54} + x^{52} + x^{51} + x^{48} + x^{46} + x^{40} + x^{39} \\
& + x^{37} + x^{36} + x^{32} + x^{31} + x^{30} + x^{29} + x^{27} + x^{25} + x^{24} + x^{20} + x^{19} \\
& + x^{17} + x^{16} + x^{14} + x^9, \\
p_6(x) &= x^{138} + x^{136} + x^{134} + x^{124} + x^{122} + x^{120} + x^{118} + x^{106} + x^{104} + x^{102} \\
& + x^{100} + x^{98} + x^{94} + x^{92} + x^{90} + x^{78} + x^{74} + x^{68} + x^{62} + x^{58} + x^{56} \\
& + x^{54} + x^{48} + x^{46} + x^{44} + x^{42} + x^{36} + x^{32} + x^{26} + x^{24} + x^{18} + x^{16} \\
& + x^{10} + x^6, \\
p_9(x) &= x^{139} + x^{138} + x^{136} + x^{135} + x^{132} + x^{130} + x^{129} + x^{128} + x^{126} + x^{123} \\
& + x^{119} + x^{116} + x^{115} + x^{114} + x^{113} + x^{112} + x^{110} + x^{106} + x^{104} \\
& + x^{99} + x^{59} + x^{58} + x^{56} + x^{55} + x^{52} + x^{50} + x^{49} + x^{48} + x^{46} + x^{43} \\
& + x^{39} + x^{36} + x^{35} + x^{34} + x^{33} + x^{32} + x^{30} + x^{27} + x^{23} + x^{20} + x^{19} \\
& + x^{18} + x^{17} + x^{16} + x^{14} + x^{10} + x^8 + x^3, \\
p_{12}(x) &= x^{140} + x^{136} + x^{124} + x^{116} + x^{112} + x^{104} + x^{100} + x^{96} + x^{60} + x^{56} \\
& + x^{44} + x^{36} + x^{32} + x^{28} + x^{20} + x^{16} + x^8 + x^4 + 1,
\end{aligned}$$

and the initial terms are $[0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 1]$.

For $\phi(M^o, 1, 0)$:

$$\begin{aligned}
p_0(x) &= x^{162} + x^{161} + x^{160} + x^{157} + x^{156} + x^{154} + x^{153} + x^{152} + x^{147} + x^{142} \\
&\quad + x^{141} + x^{139} + x^{136} + x^{133} + x^{130} + x^{126} + x^{124} + x^{123} + x^{121} \\
&\quad + x^{120} + x^{111} + x^{109} + x^{108} + x^{106} + x^{105} + x^{104} + x^{102} + x^{101} \\
&\quad + x^{100} + x^{97} + x^{96} + x^{93} + x^{92} + x^{86} + x^{85} + x^{84} + x^{83} + x^{82} + x^{81} \\
&\quad + x^{78} + x^{77} + x^{74} + x^{73} + x^{72} + x^{71} + x^{68} + x^{66} + x^{64} + x^{63} + x^{62} \\
&\quad + x^{58} + x^{56} + x^{55} + x^{53} + x^{51} + x^{50} + x^{48} + x^{47} + x^{45} + x^{44} + x^{41} \\
&\quad + x^{38} + x^{34} + x^{32} + x^{31} + x^{30} + x^{27}, \\
p_3(x) &= x^{161} + x^{160} + x^{159} + x^{155} + x^{152} + x^{150} + x^{149} + x^{148} + x^{147} + x^{146} \\
&\quad + x^{145} + x^{144} + x^{142} + x^{141} + x^{138} + x^{137} + x^{136} + x^{135} + x^{134} \\
&\quad + x^{133} + x^{132} + x^{125} + x^{124} + x^{123} + x^{122} + x^{120} + x^{118} + x^{117} \\
&\quad + x^{114} + x^{110} + x^{109} + x^{108} + x^{107} + x^{105} + x^{103} + x^{102} + x^{99} + x^{95} \\
&\quad + x^{94} + x^{93} + x^{92} + x^{90} + x^{88} + x^{87} + x^{84} + x^{80} + x^{79} + x^{78} + x^{77} \\
&\quad + x^{75} + x^{73} + x^{72} + x^{69} + x^{65} + x^{64} + x^{63} + x^{62} + x^{60} + x^{58} + x^{57} \\
&\quad + x^{54} + x^{50} + x^{49} + x^{48} + x^{47} + x^{45} + x^{43} + x^{42} + x^{41} + x^{40} + x^{34} \\
&\quad + x^{33} + x^{29} + x^{26} + x^{25} + x^{22} + x^{21} + x^{20} + x^{19} + x^{16} + x^{14} + x^9, \\
p_6(x) &= x^{162} + x^{160} + x^{156} + x^{152} + x^{146} + x^{144} + x^{142} + x^{138} + x^{136} + x^{134} \\
&\quad + x^{130} + x^{126} + x^{124} + x^{120} + x^{118} + x^{116} + x^{114} + x^{112} + x^{94} + x^{90} \\
&\quad + x^{88} + x^{86} + x^{84} + x^{82} + x^{64} + x^{60} + x^{58} + x^{56} + x^{54} + x^{52} + x^{42} \\
&\quad + x^{40} + x^{36} + x^{34} + x^{32} + x^{30} + x^{28} + x^{18} + x^{16} + x^{14} + x^{10} + x^6, \\
p_9(x) &= x^{163} + x^{162} + x^{160} + x^{158} + x^{153} + x^{152} + x^{150} + x^{149} + x^{148} + x^{147} \\
&\quad + x^{146} + x^{145} + x^{144} + x^{143} + x^{141} + x^{140} + x^{134} + x^{133} + x^{132} \\
&\quad + x^{131} + x^{125} + x^{124} + x^{123} + x^{122} + x^{121} + x^{113} + x^{111} + x^{110} \\
&\quad + x^{107} + x^{106} + x^{104} + x^{99} + x^{83} + x^{82} + x^{80} + x^{78} + x^{73} + x^{72} + x^{70} \\
&\quad + x^{69} + x^{68} + x^{67} + x^{66} + x^{65} + x^{64} + x^{63} + x^{61} + x^{60} + x^{54} + x^{53} \\
&\quad + x^{52} + x^{50} + x^{48} + x^{46} + x^{45} + x^{44} + x^{43} + x^{42} + x^{40} + x^{38} + x^{37} \\
&\quad + x^{36} + x^{29} + x^{28} + x^{27} + x^{26} + x^{25} + x^{17} + x^{15} + x^{14} + x^{11} + x^{10} \\
&\quad + x^8 + x^3, \\
p_{12}(x) &= x^{164} + x^{148} + x^{140} + x^{132} + x^{128} + x^{124} + x^{100} + x^{96} + x^{84} + x^{68} \\
&\quad + x^{60} + x^{48} + x^{44} + x^{28} + x^4 + 1,
\end{aligned}$$

and the initial terms are $[0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 1, 0, 1, 0, 0, 0]$.

For $\phi(M^o, 1, 1)$:

$$\begin{aligned}
p_0(x) &= x^{147} + x^{145} + x^{143} + x^{142} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135} + x^{132} \\
&\quad + x^{131} + x^{129} + x^{127} + x^{126} + x^{125} + x^{123} + x^{119} + x^{118} + x^{117} \\
&\quad + x^{116} + x^{115} + x^{114} + x^{111} + x^{110} + x^{109} + x^{105} + x^{100} + x^{99} + x^{96}
\end{aligned}$$

$$\begin{aligned}
& + x^{93} + x^{92} + x^{91} + x^{87} + x^{85} + x^{79} + x^{77} + x^{73} + x^{72} + x^{71} + x^{65} \\
& + x^{64} + x^{63} + x^{62} + x^{60} + x^{59} + x^{58} + x^{56} + x^{55} + x^{54} + x^{52} + x^{48} \\
& + x^{46} + x^{45} + x^{43} + x^{42} + x^{41} + x^{39} + x^{38} + x^{36} + x^{35} + x^{33}, \\
p_3(x) &= x^{146} + x^{144} + x^{143} + x^{142} + x^{139} + x^{137} + x^{135} + x^{134} + x^{132} + x^{130} \\
& + x^{127} + x^{126} + x^{121} + x^{118} + x^{117} + x^{105} + x^{104} + x^{102} + x^{101} \\
& + x^{100} + x^{98} + x^{96} + x^{95} + x^{94} + x^{93} + x^{91} + x^{90} + x^{89} + x^{87} + x^{86} \\
& + x^{85} + x^{83} + x^{82} + x^{80} + x^{78} + x^{74} + x^{72} + x^{70} + x^{69} + x^{67} + x^{66} \\
& + x^{65} + x^{62} + x^{60} + x^{58} + x^{57} + x^{55} + x^{47} + x^{46} + x^{45} + x^{32} + x^{30} \\
& + x^{29} + x^{27} + x^{26} + x^{25} + x^{23} + x^{21} + x^{20} + x^{16} + x^{14} + x^{12}, \\
p_6(x) &= x^{146} + x^{144} + x^{143} + x^{142} + x^{141} + x^{139} + x^{136} + x^{132} + x^{131} + x^{130} \\
& + x^{124} + x^{123} + x^{121} + x^{120} + x^{117} + x^{115} + x^{114} + x^{113} + x^{112} \\
& + x^{111} + x^{110} + x^{108} + x^{106} + x^{105} + x^{102} + x^{100} + x^{99} + x^{98} + x^{97} \\
& + x^{96} + x^{95} + x^{94} + x^{93} + x^{90} + x^{88} + x^{87} + x^{85} + x^{82} + x^{80} + x^{79} \\
& + x^{77} + x^{76} + x^{74} + x^{72} + x^{71} + x^{70} + x^{67} + x^{63} + x^{60} + x^{59} + x^{57} \\
& + x^{55} + x^{52} + x^{50} + x^{49} + x^{47} + x^{46} + x^{45} + x^{44} + x^{41} + x^{40} + x^{37} \\
& + x^{36} + x^{34} + x^{33} + x^{32} + x^{31} + x^{30} + x^{29} + x^{28} + x^{27} + x^{26} + x^{25} \\
& + x^{24} + x^{23} + x^{19} + x^{18} + x^{16} + x^{15} + x^{14} + x^{13} + x^{11} + x^6 + x^5 + x^4 \\
& + x^3 + x^2 + 1, \\
p_9(x) &= x^{146} + x^{145} + x^{144} + x^{143} + x^{142} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135} \\
& + x^{133} + x^{131} + x^{130} + x^{128} + x^{118} + x^{117} + x^{116} + x^{115} + x^{113} \\
& + x^{111} + x^{110} + x^{108} + x^{106} + x^{105} + x^{104} + x^{103} + x^{102} + x^{100} \\
& + x^{66} + x^{65} + x^{64} + x^{63} + x^{62} + x^{60} + x^{58} + x^{57} + x^{56} + x^{55} + x^{53} \\
& + x^{51} + x^{50} + x^{48} + x^{38} + x^{37} + x^{36} + x^{35} + x^{34} + x^{32} + x^{22} + x^{21} \\
& + x^{20} + x^{19} + x^{17} + x^{15} + x^{14} + x^{12} + x^{10} + x^9 + x^8 + x^7 + x^6 + x^4, \\
p_{12}(x) &= x^{146} + x^{145} + x^{144} + x^{143} + x^{141} + x^{139} + x^{138} + x^{136} + x^{130} + x^{129} \\
& + x^{128} + x^{127} + x^{126} + x^{124} + x^{122} + x^{121} + x^{120} + x^{119} + x^{117} \\
& + x^{115} + x^{114} + x^{112} + x^{110} + x^{109} + x^{108} + x^{107} + x^{105} + x^{103} \\
& + x^{101} + x^{99} + x^{98} + x^{96} + x^{66} + x^{65} + x^{64} + x^{63} + x^{61} + x^{59} + x^{58} \\
& + x^{56} + x^{50} + x^{49} + x^{48} + x^{47} + x^{46} + x^{44} + x^{42} + x^{41} + x^{40} + x^{39} \\
& + x^{37} + x^{35} + x^{33} + x^{31} + x^{30} + x^{28} + x^{26} + x^{25} + x^{24} + x^{23} + x^{21} \\
& + x^{19} + x^{18} + x^{16} + x^{14} + x^{13} + x^{12} + x^{11} + x^9 + x^7 + x^5 + x^3 + x^2 \\
& + 1,
\end{aligned}$$

and the initial terms are $[0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 1, 0, 1, 1, 0]$.

For $\phi(W^o, 0, 0)$:

$$p_0(x) = x^{147} + x^{146} + x^{145} + x^{144} + x^{142} + x^{138} + x^{137} + x^{131} + x^{130} + x^{128}$$

$$\begin{aligned}
& + x^{127} + x^{126} + x^{123} + x^{120} + x^{119} + x^{115} + x^{113} + x^{110} + x^{106} \\
& + x^{102} + x^{98} + x^{97} + x^{95} + x^{93} + x^{92} + x^{90} + x^{89} + x^{88} + x^{86} + x^{85} \\
& + x^{84} + x^{82} + x^{79} + x^{78} + x^{76} + x^{75} + x^{71} + x^{70} + x^{69} + x^{68} + x^{62} \\
& + x^{61} + x^{59} + x^{57} + x^{54} + x^{52} + x^{51} + x^{46} + x^{45} + x^{43} + x^{38} + x^{37} \\
& + x^{36} + x^{35} + x^{34} + x^{32} + x^{30} + x^{29} + x^{26} + x^{24} + x^{23} + x^{22} + x^{21} \\
& + x^{19} + x^{16} + x^{15} + x^{12}, \\
p_3(x) = & x^{146} + x^{141} + x^{140} + x^{139} + x^{138} + x^{137} + x^{136} + x^{133} + x^{132} + x^{131} \\
& + x^{130} + x^{129} + x^{128} + x^{127} + x^{126} + x^{125} + x^{117} + x^{116} + x^{115} \\
& + x^{114} + x^{113} + x^{112} + x^{110} + x^{105} + x^{103} + x^{102} + x^{101} + x^{100} \\
& + x^{99} + x^{98} + x^{95} + x^{94} + x^{93} + x^{91} + x^{90} + x^{89} + x^{88} + x^{84} + x^{83} \\
& + x^{80} + x^{78} + x^{76} + x^{75} + x^{73} + x^{70} + x^{68} + x^{65} + x^{63} + x^{62} + x^{56} \\
& + x^{54} + x^{51} + x^{48} + x^{47} + x^{44} + x^{43} + x^{42} + x^{39} + x^{38} + x^{37} + x^{35} \\
& + x^{33} + x^{32} + x^{31} + x^{29} + x^{28} + x^{27} + x^{23} + x^{22} + x^{21} + x^{20} + x^{15} \\
& + x^{14} + x^{12} + x^{11} + x^8, \\
p_6(x) = & x^{146} + x^{137} + x^{134} + x^{132} + x^{131} + x^{130} + x^{128} + x^{127} + x^{123} + x^{121} \\
& + x^{119} + x^{118} + x^{113} + x^{112} + x^{110} + x^{106} + x^{105} + x^{102} + x^{100} \\
& + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{90} + x^{89} + x^{84} + x^{82} + x^{81} + x^{72} \\
& + x^{71} + x^{70} + x^{68} + x^{66} + x^{65} + x^{61} + x^{60} + x^{58} + x^{57} + x^{54} + x^{53} \\
& + x^{49} + x^{47} + x^{44} + x^{42} + x^{41} + x^{40} + x^{38} + x^{35} + x^{33} + x^{32} + x^{27} \\
& + x^{26} + x^{24} + x^{23} + x^{21} + x^{19} + x^{14} + x^{13} + x^{12} + x^{11} + x^8 + x^7 + x^6 \\
& + x^5 + x^3 + x^2 + 1, \\
p_9(x) = & x^{146} + x^{145} + x^{144} + x^{143} + x^{142} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135} \\
& + x^{133} + x^{131} + x^{130} + x^{128} + x^{118} + x^{117} + x^{116} + x^{115} + x^{113} \\
& + x^{111} + x^{110} + x^{108} + x^{106} + x^{105} + x^{104} + x^{103} + x^{102} + x^{100} \\
& + x^{66} + x^{65} + x^{64} + x^{63} + x^{62} + x^{60} + x^{58} + x^{57} + x^{56} + x^{55} + x^{53} \\
& + x^{51} + x^{50} + x^{48} + x^{38} + x^{37} + x^{36} + x^{35} + x^{34} + x^{32} + x^{22} + x^{21} \\
& + x^{20} + x^{19} + x^{17} + x^{15} + x^{14} + x^{12} + x^{10} + x^9 + x^8 + x^7 + x^6 + x^4, \\
p_{12}(x) = & x^{146} + x^{145} + x^{144} + x^{143} + x^{141} + x^{139} + x^{138} + x^{136} + x^{130} + x^{129} \\
& + x^{128} + x^{127} + x^{126} + x^{124} + x^{122} + x^{121} + x^{120} + x^{119} + x^{117} \\
& + x^{115} + x^{114} + x^{112} + x^{110} + x^{109} + x^{108} + x^{107} + x^{105} + x^{103} \\
& + x^{101} + x^{99} + x^{98} + x^{96} + x^{66} + x^{65} + x^{64} + x^{63} + x^{61} + x^{59} + x^{58} \\
& + x^{56} + x^{50} + x^{49} + x^{48} + x^{47} + x^{46} + x^{44} + x^{42} + x^{41} + x^{40} + x^{39} \\
& + x^{37} + x^{35} + x^{33} + x^{31} + x^{30} + x^{28} + x^{26} + x^{25} + x^{24} + x^{23} + x^{21} \\
& + x^{19} + x^{18} + x^{16} + x^{14} + x^{13} + x^{12} + x^{11} + x^9 + x^7 + x^5 + x^3 + x^2 \\
& + 1,
\end{aligned}$$

and the initial terms are $[1, 0, 1, 0, 0, 0, 0, 1, 1, 0, 0, 1, 1, 1, 1, 0]$.

For $\phi(W^o, 0, 1)$:

$$\begin{aligned}
p_0(x) &= x^{162} + x^{161} + x^{160} + x^{157} + x^{156} + x^{154} + x^{153} + x^{152} + x^{147} + x^{142} \\
&\quad + x^{141} + x^{139} + x^{136} + x^{133} + x^{130} + x^{126} + x^{124} + x^{123} + x^{121} \\
&\quad + x^{120} + x^{111} + x^{109} + x^{108} + x^{106} + x^{105} + x^{104} + x^{102} + x^{101} \\
&\quad + x^{100} + x^{97} + x^{96} + x^{93} + x^{92} + x^{86} + x^{85} + x^{84} + x^{83} + x^{82} + x^{81} \\
&\quad + x^{78} + x^{77} + x^{74} + x^{73} + x^{72} + x^{71} + x^{68} + x^{66} + x^{64} + x^{63} + x^{62} \\
&\quad + x^{58} + x^{56} + x^{55} + x^{53} + x^{51} + x^{50} + x^{48} + x^{47} + x^{45} + x^{44} + x^{41} \\
&\quad + x^{38} + x^{34} + x^{32} + x^{31} + x^{30} + x^{27}, \\
p_3(x) &= x^{161} + x^{160} + x^{159} + x^{155} + x^{152} + x^{150} + x^{149} + x^{148} + x^{147} + x^{146} \\
&\quad + x^{145} + x^{144} + x^{142} + x^{141} + x^{138} + x^{137} + x^{136} + x^{135} + x^{134} \\
&\quad + x^{133} + x^{132} + x^{125} + x^{124} + x^{123} + x^{122} + x^{120} + x^{118} + x^{117} \\
&\quad + x^{114} + x^{110} + x^{109} + x^{108} + x^{107} + x^{105} + x^{103} + x^{102} + x^{99} + x^{95} \\
&\quad + x^{94} + x^{93} + x^{92} + x^{90} + x^{88} + x^{87} + x^{84} + x^{80} + x^{79} + x^{78} + x^{77} \\
&\quad + x^{75} + x^{73} + x^{72} + x^{69} + x^{65} + x^{64} + x^{63} + x^{62} + x^{60} + x^{58} + x^{57} \\
&\quad + x^{54} + x^{50} + x^{49} + x^{48} + x^{47} + x^{45} + x^{43} + x^{42} + x^{41} + x^{40} + x^{34} \\
&\quad + x^{33} + x^{29} + x^{26} + x^{25} + x^{22} + x^{21} + x^{20} + x^{19} + x^{16} + x^{14} + x^9, \\
p_6(x) &= x^{162} + x^{160} + x^{156} + x^{152} + x^{146} + x^{144} + x^{142} + x^{138} + x^{136} + x^{134} \\
&\quad + x^{130} + x^{126} + x^{124} + x^{120} + x^{118} + x^{116} + x^{114} + x^{112} + x^{94} + x^{90} \\
&\quad + x^{88} + x^{86} + x^{84} + x^{82} + x^{64} + x^{60} + x^{58} + x^{56} + x^{54} + x^{52} + x^{42} \\
&\quad + x^{40} + x^{36} + x^{34} + x^{32} + x^{30} + x^{28} + x^{18} + x^{16} + x^{14} + x^{10} + x^6, \\
p_9(x) &= x^{163} + x^{162} + x^{160} + x^{158} + x^{153} + x^{152} + x^{150} + x^{149} + x^{148} + x^{147} \\
&\quad + x^{146} + x^{145} + x^{144} + x^{143} + x^{141} + x^{140} + x^{134} + x^{133} + x^{132} \\
&\quad + x^{131} + x^{125} + x^{124} + x^{123} + x^{122} + x^{121} + x^{113} + x^{111} + x^{110} \\
&\quad + x^{107} + x^{106} + x^{104} + x^{99} + x^{83} + x^{82} + x^{80} + x^{78} + x^{73} + x^{72} + x^{70} \\
&\quad + x^{69} + x^{68} + x^{67} + x^{66} + x^{65} + x^{64} + x^{63} + x^{61} + x^{60} + x^{54} + x^{53} \\
&\quad + x^{52} + x^{50} + x^{48} + x^{46} + x^{45} + x^{44} + x^{43} + x^{42} + x^{40} + x^{38} + x^{37} \\
&\quad + x^{36} + x^{29} + x^{28} + x^{27} + x^{26} + x^{25} + x^{17} + x^{15} + x^{14} + x^{11} + x^{10} \\
&\quad + x^8 + x^3, \\
p_{12}(x) &= x^{164} + x^{148} + x^{140} + x^{132} + x^{128} + x^{124} + x^{100} + x^{96} + x^{84} + x^{68} \\
&\quad + x^{60} + x^{48} + x^{44} + x^{28} + x^4 + 1,
\end{aligned}$$

and the initial terms are $[0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 1, 0, 1, 0, 0, 0]$.

For $\phi(W^o, 1, 0)$:

$$\begin{aligned}
p_0(x) &= x^{144} + x^{141} + x^{139} + x^{138} + x^{137} + x^{136} + x^{135} + x^{134} + x^{133} + x^{132} \\
&\quad + x^{131} + x^{129} + x^{128} + x^{126} + x^{124} + x^{123} + x^{122} + x^{120} + x^{118}
\end{aligned}$$

$$\begin{aligned}
& + x^{117} + x^{116} + x^{114} + x^{112} + x^{111} + x^{110} + x^{107} + x^{106} + x^{104} \\
& + x^{102} + x^{101} + x^{96} + x^{92} + x^{89} + x^{88} + x^{87} + x^{86} + x^{83} + x^{82} + x^{79} \\
& + x^{78} + x^{76} + x^{75} + x^{74} + x^{72} + x^{71} + x^{67} + x^{66} + x^{65} + x^{60} + x^{54} \\
& + x^{53} + x^{51} + x^{46} + x^{43} + x^{42} + x^{41} + x^{40} + x^{39} + x^{38} + x^{37} + x^{36} \\
& + x^{35} + x^{34} + x^{33} + x^{32} + x^{29} + x^{26} + x^{24} + x^{22} + x^{21} + x^{20} + x^{18}, \\
p_3(x) = & x^{137} + x^{136} + x^{135} + x^{133} + x^{132} + x^{128} + x^{127} + x^{126} + x^{125} + x^{123} \\
& + x^{119} + x^{117} + x^{115} + x^{112} + x^{108} + x^{107} + x^{105} + x^{104} + x^{102} \\
& + x^{97} + x^{81} + x^{80} + x^{79} + x^{77} + x^{76} + x^{73} + x^{70} + x^{68} + x^{67} + x^{65} \\
& + x^{63} + x^{62} + x^{61} + x^{60} + x^{54} + x^{52} + x^{51} + x^{48} + x^{46} + x^{40} + x^{39} \\
& + x^{37} + x^{36} + x^{32} + x^{31} + x^{30} + x^{29} + x^{27} + x^{25} + x^{24} + x^{20} + x^{19} \\
& + x^{17} + x^{16} + x^{14} + x^9, \\
p_6(x) = & x^{138} + x^{136} + x^{134} + x^{124} + x^{122} + x^{120} + x^{118} + x^{106} + x^{104} + x^{102} \\
& + x^{100} + x^{98} + x^{94} + x^{92} + x^{90} + x^{78} + x^{74} + x^{68} + x^{62} + x^{58} + x^{56} \\
& + x^{54} + x^{48} + x^{46} + x^{44} + x^{42} + x^{36} + x^{32} + x^{26} + x^{24} + x^{18} + x^{16} \\
& + x^{10} + x^6, \\
p_9(x) = & x^{139} + x^{138} + x^{136} + x^{135} + x^{132} + x^{130} + x^{129} + x^{128} + x^{126} + x^{123} \\
& + x^{119} + x^{116} + x^{115} + x^{114} + x^{113} + x^{112} + x^{110} + x^{106} + x^{104} \\
& + x^{99} + x^{59} + x^{58} + x^{56} + x^{55} + x^{52} + x^{50} + x^{49} + x^{48} + x^{46} + x^{43} \\
& + x^{39} + x^{36} + x^{35} + x^{34} + x^{33} + x^{32} + x^{30} + x^{27} + x^{23} + x^{20} + x^{19} \\
& + x^{18} + x^{17} + x^{16} + x^{14} + x^{10} + x^8 + x^3, \\
p_{12}(x) = & x^{140} + x^{136} + x^{124} + x^{116} + x^{112} + x^{104} + x^{100} + x^{96} + x^{60} + x^{56} \\
& + x^{44} + x^{36} + x^{32} + x^{28} + x^{20} + x^{16} + x^8 + x^4 + 1,
\end{aligned}$$

and the initial terms are $[0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 1]$.

For $\phi(W^o, 1, 1)$:

$$\begin{aligned}
p_0(x) = & x^{147} + x^{145} + x^{143} + x^{142} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135} + x^{132} \\
& + x^{131} + x^{129} + x^{127} + x^{126} + x^{125} + x^{123} + x^{119} + x^{118} + x^{117} \\
& + x^{116} + x^{115} + x^{114} + x^{111} + x^{110} + x^{109} + x^{105} + x^{100} + x^{99} + x^{96} \\
& + x^{93} + x^{92} + x^{91} + x^{87} + x^{85} + x^{79} + x^{77} + x^{73} + x^{72} + x^{71} + x^{65} \\
& + x^{64} + x^{63} + x^{62} + x^{60} + x^{59} + x^{58} + x^{56} + x^{55} + x^{54} + x^{52} + x^{48} \\
& + x^{46} + x^{45} + x^{43} + x^{42} + x^{41} + x^{39} + x^{38} + x^{36} + x^{35} + x^{33}, \\
p_3(x) = & x^{146} + x^{144} + x^{143} + x^{142} + x^{139} + x^{137} + x^{135} + x^{134} + x^{132} + x^{130} \\
& + x^{127} + x^{126} + x^{121} + x^{118} + x^{117} + x^{105} + x^{104} + x^{102} + x^{101} \\
& + x^{100} + x^{98} + x^{96} + x^{95} + x^{94} + x^{93} + x^{91} + x^{90} + x^{89} + x^{87} + x^{86} \\
& + x^{85} + x^{83} + x^{82} + x^{80} + x^{78} + x^{74} + x^{72} + x^{70} + x^{69} + x^{67} + x^{66} \\
& + x^{65} + x^{62} + x^{60} + x^{58} + x^{57} + x^{55} + x^{47} + x^{46} + x^{45} + x^{32} + x^{30}
\end{aligned}$$

$$\begin{aligned}
& + x^{29} + x^{27} + x^{26} + x^{25} + x^{23} + x^{21} + x^{20} + x^{16} + x^{14} + x^{12}, \\
p_6(x) = & x^{146} + x^{144} + x^{143} + x^{142} + x^{141} + x^{139} + x^{136} + x^{132} + x^{131} + x^{130} \\
& + x^{124} + x^{123} + x^{121} + x^{120} + x^{117} + x^{115} + x^{114} + x^{113} + x^{112} \\
& + x^{111} + x^{110} + x^{108} + x^{106} + x^{105} + x^{102} + x^{100} + x^{99} + x^{98} + x^{97} \\
& + x^{96} + x^{95} + x^{94} + x^{93} + x^{90} + x^{88} + x^{87} + x^{85} + x^{82} + x^{80} + x^{79} \\
& + x^{77} + x^{76} + x^{74} + x^{72} + x^{71} + x^{70} + x^{67} + x^{63} + x^{60} + x^{59} + x^{57} \\
& + x^{55} + x^{52} + x^{50} + x^{49} + x^{47} + x^{46} + x^{45} + x^{44} + x^{41} + x^{40} + x^{37} \\
& + x^{36} + x^{34} + x^{33} + x^{32} + x^{31} + x^{30} + x^{29} + x^{28} + x^{27} + x^{26} + x^{25} \\
& + x^{24} + x^{23} + x^{19} + x^{18} + x^{16} + x^{15} + x^{14} + x^{13} + x^{11} + x^6 + x^5 + x^4 \\
& + x^3 + x^2 + 1, \\
p_9(x) = & x^{146} + x^{145} + x^{144} + x^{143} + x^{142} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135} \\
& + x^{133} + x^{131} + x^{130} + x^{128} + x^{118} + x^{117} + x^{116} + x^{115} + x^{113} \\
& + x^{111} + x^{110} + x^{108} + x^{106} + x^{105} + x^{104} + x^{103} + x^{102} + x^{100} \\
& + x^{66} + x^{65} + x^{64} + x^{63} + x^{62} + x^{60} + x^{58} + x^{57} + x^{56} + x^{55} + x^{53} \\
& + x^{51} + x^{50} + x^{48} + x^{38} + x^{37} + x^{36} + x^{35} + x^{34} + x^{32} + x^{22} + x^{21} \\
& + x^{20} + x^{19} + x^{17} + x^{15} + x^{14} + x^{12} + x^{10} + x^9 + x^8 + x^7 + x^6 + x^4, \\
p_{12}(x) = & x^{146} + x^{145} + x^{144} + x^{143} + x^{141} + x^{139} + x^{138} + x^{136} + x^{130} + x^{129} \\
& + x^{128} + x^{127} + x^{126} + x^{124} + x^{122} + x^{121} + x^{120} + x^{119} + x^{117} \\
& + x^{115} + x^{114} + x^{112} + x^{110} + x^{109} + x^{108} + x^{107} + x^{105} + x^{103} \\
& + x^{101} + x^{99} + x^{98} + x^{96} + x^{66} + x^{65} + x^{64} + x^{63} + x^{61} + x^{59} + x^{58} \\
& + x^{56} + x^{50} + x^{49} + x^{48} + x^{47} + x^{46} + x^{44} + x^{42} + x^{41} + x^{40} + x^{39} \\
& + x^{37} + x^{35} + x^{33} + x^{31} + x^{30} + x^{28} + x^{26} + x^{25} + x^{24} + x^{23} + x^{21} \\
& + x^{19} + x^{18} + x^{16} + x^{14} + x^{13} + x^{12} + x^{11} + x^9 + x^7 + x^5 + x^3 + x^2 \\
& + 1,
\end{aligned}$$

and the initial terms are $[0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 1, 0, 1, 1, 0]$.

Below is the transition function and output function of an 2-automaton that generates $T = M_{0,0}^o$:

Transition function $(n, j) \mapsto \delta(n, j)$ ($\Lambda(n) := [\delta(n, 0), \delta(n, 1)]$):

n	$\Lambda(n)$	n	$\Lambda(n)$	n	$\Lambda(n)$	n	$\Lambda(n)$
0	[1, 2]	1582	[2368, 2369]	3164	[4091, 3685]	4746	[5343, 5386]
1	[3, 4]	1583	[2370, 2371]	3165	[3733, 3759]	4747	[2027, 5387]
2	[5, 6]	1584	[2372, 2373]	3166	[4092, 1838]	4748	[636, 3877]
3	[7, 8]	1585	[2374, 2375]	3167	[4036, 678]	4749	[5388, 5230]
4	[9, 10]	1586	[2376, 2377]	3168	[156, 1634]	4750	[4007, 1762]
5	[11, 12]	1587	[2378, 2379]	3169	[3880, 585]	4751	[5339, 1758]
6	[13, 14]	1588	[2380, 2381]	3170	[245, 722]	4752	[4015, 3631]
7	[15, 16]	1589	[1486, 2382]	3171	[1631, 4093]	4753	[5316, 4165]

8	[17, 18]	1590	[2383, 2384]	3172	[3922, 739]	4754	[2087, 3835]
9	[19, 20]	1591	[2385, 334]	3173	[3934, 547]	4755	[2056, 1614]
10	[21, 22]	1592	[362, 953]	3174	[4094, 1937]	4756	[3723, 1921]
11	[23, 24]	1593	[2386, 2387]	3175	[2263, 2160]	4757	[5389, 762]
12	[25, 26]	1594	[2388, 370]	3176	[4095, 1749]	4758	[5390, 5256]
13	[27, 28]	1595	[2389, 2390]	3177	[4096, 1602]	4759	[5391, 3845]
14	[29, 30]	1596	[2391, 2392]	3178	[1752, 804]	4760	[5392, 2291]
15	[31, 32]	1597	[2393, 2394]	3179	[4097, 1836]	4761	[4281, 1832]
16	[33, 34]	1598	[1253, 1365]	3180	[4098, 2016]	4762	[5249, 542]
17	[35, 36]	1599	[2395, 2396]	3181	[216, 1838]	4763	[1631, 4261]
18	[37, 38]	1600	[108, 2397]	3182	[1744, 4099]	4764	[2167, 1832]
19	[39, 40]	1601	[1016, 2398]	3183	[4100, 4101]	4765	[2295, 1853]
20	[41, 42]	1602	[2399, 2400]	3184	[4102, 2217]	4766	[2098, 714]
21	[43, 44]	1603	[2401, 2402]	3185	[4103, 2170]	4767	[5393, 3863]
22	[45, 46]	1604	[2403, 2404]	3186	[670, 4041]	4768	[5394, 1700]
23	[47, 48]	1605	[2405, 2406]	3187	[4104, 4105]	4769	[5395, 5396]
24	[49, 50]	1606	[2407, 2408]	3188	[4106, 3655]	4770	[2332, 4210]
25	[51, 52]	1607	[2409, 2410]	3189	[733, 2176]	4771	[2309, 5377]
26	[53, 54]	1608	[2411, 2412]	3190	[4107, 792]	4772	[5397, 744]
27	[55, 56]	1609	[2413, 2414]	3191	[1955, 666]	4773	[5398, 2119]
28	[57, 58]	1610	[2415, 945]	3192	[4108, 3614]	4774	[5399, 3777]
29	[59, 60]	1611	[2416, 881]	3193	[3599, 1810]	4775	[5400, 652]
30	[61, 62]	1612	[2417, 2418]	3194	[3887, 38]	4776	[5401, 537]
31	[63, 64]	1613	[2419, 2420]	3195	[4109, 4002]	4777	[5402, 862]
32	[65, 66]	1614	[2421, 2422]	3196	[4110, 4111]	4778	[3566, 223]
33	[67, 68]	1615	[2423, 349]	3197	[4077, 2284]	4779	[3895, 3835]
34	[69, 70]	1616	[2424, 2425]	3198	[4112, 56]	4780	[742, 4055]
35	[71, 72]	1617	[2426, 2427]	3199	[4050, 3570]	4781	[2256, 3648]
36	[73, 74]	1618	[28, 2428]	3200	[4113, 3640]	4782	[4260, 763]
37	[75, 76]	1619	[2429, 2430]	3201	[1782, 3575]	4783	[5403, 746]
38	[77, 78]	1620	[2431, 1510]	3202	[4114, 1839]	4784	[5404, 532]
39	[79, 80]	1621	[2432, 2433]	3203	[3728, 1903]	4785	[4151, 501]
40	[81, 82]	1622	[948, 1225]	3204	[4104, 196]	4786	[5405, 5406]
41	[83, 84]	1623	[2434, 2435]	3205	[4115, 2215]	4787	[1666, 5323]
42	[85, 86]	1624	[956, 2436]	3206	[1717, 4116]	4788	[5407, 1811]
43	[87, 88]	1625	[2437, 2438]	3207	[4117, 4118]	4789	[5408, 1701]
44	[89, 90]	1626	[2439, 1233]	3208	[4048, 1964]	4790	[4288, 3884]
45	[91, 92]	1627	[2440, 2441]	3209	[4119, 3700]	4791	[1807, 4099]
46	[93, 94]	1628	[1421, 2442]	3210	[4120, 1968]	4792	[5409, 3900]
47	[95, 96]	1629	[2443, 1405]	3211	[4121, 3694]	4793	[4241, 714]
48	[97, 98]	1630	[2444, 2445]	3212	[4103, 699]	4794	[4006, 673]
49	[99, 100]	1631	[2446, 2447]	3213	[1948, 1834]	4795	[4273, 3983]
50	[101, 102]	1632	[1479, 1032]	3214	[4122, 4123]	4796	[1803, 720]
51	[103, 104]	1633	[2448, 2449]	3215	[752, 2108]	4797	[5410, 1933]

52	[105, 106]	1634	[2450, 2451]	3216	[4124, 3635]	4798	[4021, 3575]
53	[107, 108]	1635	[2452, 2453]	3217	[4125, 202]	4799	[2081, 3640]
54	[109, 110]	1636	[2454, 2455]	3218	[4126, 2181]	4800	[548, 672]
55	[111, 112]	1637	[2456, 2457]	3219	[4075, 679]	4801	[133, 1929]
56	[113, 114]	1638	[883, 2458]	3220	[4127, 792]	4802	[5411, 4230]
57	[115, 116]	1639	[2459, 2460]	3221	[4128, 3741]	4803	[5412, 4012]
58	[117, 118]	1640	[2461, 2462]	3222	[4129, 60]	4804	[2044, 175]
59	[119, 120]	1641	[2463, 1336]	3223	[4130, 2219]	4805	[3953, 3843]
60	[121, 122]	1642	[2464, 2401]	3224	[137, 675]	4806	[5413, 3850]
61	[123, 124]	1643	[2465, 2466]	3225	[538, 748]	4807	[2180, 5312]
62	[125, 126]	1644	[2467, 2468]	3226	[4131, 514]	4808	[5242, 1588]
63	[127, 128]	1645	[2469, 2470]	3227	[2155, 693]	4809	[1603, 4193]
64	[129, 130]	1646	[2471, 2472]	3228	[4042, 233]	4810	[3877, 5406]
65	[131, 132]	1647	[1534, 2473]	3229	[4132, 4133]	4811	[4227, 762]
66	[133, 134]	1648	[2474, 2475]	3230	[4134, 4135]	4812	[2071, 774]
67	[135, 136]	1649	[2476, 2477]	3231	[519, 1921]	4813	[3596, 1822]
68	[137, 138]	1650	[2478, 2479]	3232	[3964, 734]	4814	[5414, 2163]
69	[139, 140]	1651	[2480, 2430]	3233	[3766, 1909]	4815	[5392, 3981]
70	[141, 142]	1652	[1158, 2481]	3234	[4136, 3954]	4816	[4121, 696]
71	[143, 144]	1653	[2482, 2483]	3235	[32, 2340]	4817	[2294, 1702]
72	[145, 146]	1654	[2484, 2485]	3236	[140, 4137]	4818	[4060, 2170]
73	[147, 148]	1655	[2486, 2487]	3237	[4138, 3937]	4819	[847, 4093]
74	[149, 150]	1656	[2488, 2489]	3238	[4139, 520]	4820	[5415, 5416]
75	[151, 137]	1657	[2490, 2491]	3239	[4140, 4141]	4821	[5417, 3937]
76	[152, 153]	1658	[2492, 2493]	3240	[197, 190]	4822	[5333, 871]
77	[154, 155]	1659	[2494, 2495]	3241	[4142, 3775]	4823	[3896, 3976]
78	[156, 157]	1660	[2496, 2497]	3242	[4143, 1758]	4824	[3668, 1897]
79	[158, 159]	1661	[2498, 2499]	3243	[2244, 1828]	4825	[5418, 198]
80	[160, 161]	1662	[2500, 2501]	3244	[4144, 2045]	4826	[5419, 2028]
81	[162, 163]	1663	[2502, 2503]	3245	[3699, 2209]	4827	[1622, 137]
82	[164, 165]	1664	[2504, 2505]	3246	[4145, 689]	4828	[5420, 1650]
83	[166, 167]	1665	[2506, 2507]	3247	[4146, 3812]	4829	[5421, 547]
84	[168, 169]	1666	[2508, 2509]	3248	[2202, 4147]	4830	[5422, 654]
85	[170, 10]	1667	[2510, 2511]	3249	[3853, 3690]	4831	[4249, 5268]
86	[171, 172]	1668	[2512, 2513]	3250	[4071, 3891]	4832	[3842, 4149]
87	[173, 174]	1669	[2514, 2515]	3251	[4148, 3833]	4833	[573, 768]
88	[175, 131]	1670	[2516, 2517]	3252	[4035, 4149]	4834	[3953, 1844]
89	[176, 177]	1671	[2518, 2519]	3253	[1648, 1904]	4835	[5423, 179]
90	[178, 179]	1672	[2520, 2521]	3254	[3732, 3610]	4836	[3936, 5342]
91	[180, 181]	1673	[2522, 1198]	3255	[4150, 8]	4837	[4044, 518]
92	[182, 183]	1674	[2523, 2524]	3256	[576, 1820]	4838	[5424, 3781]
93	[184, 155]	1675	[2525, 2526]	3257	[160, 1583]	4839	[5425, 1614]
94	[185, 186]	1676	[68, 1529]	3258	[4151, 1933]	4840	[5426, 14]
95	[187, 188]	1677	[1477, 1030]	3259	[2329, 3701]	4841	[5427, 2073]

96	[189, 190]	1678	[2527, 1164]	3260	[4152, 2038]	4842	[5428, 4026]
97	[191, 192]	1679	[2528, 2498]	3261	[4153, 1847]	4843	[5429, 1794]
98	[193, 194]	1680	[2529, 2530]	3262	[3682, 3653]	4844	[4028, 1869]
99	[195, 196]	1681	[2531, 1070]	3263	[4154, 1665]	4845	[4145, 5416]
100	[197, 198]	1682	[2532, 307]	3264	[4155, 4156]	4846	[1594, 798]
101	[199, 200]	1683	[2533, 2534]	3265	[4157, 1847]	4847	[5372, 3648]
102	[201, 202]	1684	[2535, 1308]	3266	[3995, 690]	4848	[3778, 2248]
103	[203, 204]	1685	[2536, 2537]	3267	[4031, 3903]	4849	[684, 2163]
104	[205, 206]	1686	[2538, 2539]	3268	[1960, 561]	4850	[5294, 3660]
105	[207, 208]	1687	[2540, 1048]	3269	[4158, 2264]	4851	[5430, 4059]
106	[209, 210]	1688	[2541, 2542]	3270	[4159, 3805]	4852	[5431, 5406]
107	[211, 212]	1689	[2543, 2544]	3271	[3810, 543]	4853	[3912, 653]
108	[213, 214]	1690	[2545, 2546]	3272	[4160, 1975]	4854	[5432, 5396]
109	[215, 216]	1691	[2547, 1391]	3273	[2103, 3812]	4855	[5433, 2053]
110	[217, 218]	1692	[2548, 1173]	3274	[3907, 1638]	4856	[4176, 4118]
111	[219, 220]	1693	[2549, 2550]	3275	[3905, 543]	4857	[765, 1905]
112	[221, 10]	1694	[2551, 2552]	3276	[1981, 512]	4858	[1673, 2232]
113	[222, 223]	1695	[2553, 2554]	3277	[698, 2170]	4859	[3865, 60]
114	[224, 225]	1696	[2555, 2556]	3278	[3660, 723]	4860	[1773, 1599]
115	[226, 227]	1697	[2557, 2558]	3279	[3889, 1661]	4861	[657, 1992]
116	[228, 229]	1698	[2559, 1009]	3280	[4161, 4162]	4862	[5434, 3723]
117	[230, 231]	1699	[2560, 2561]	3281	[4163, 2043]	4863	[5357, 1846]
118	[232, 233]	1700	[2562, 2563]	3282	[4013, 1828]	4864	[2154, 1992]
119	[234, 235]	1701	[2564, 2565]	3283	[2083, 2208]	4865	[159, 3927]
120	[236, 157]	1702	[2566, 2567]	3284	[2032, 4088]	4866	[2260, 4002]
121	[237, 238]	1703	[2568, 2569]	3285	[4164, 4165]	4867	[5435, 3717]
122	[239, 240]	1704	[2570, 2571]	3286	[795, 3709]	4868	[4205, 233]
123	[241, 242]	1705	[2572, 2573]	3287	[3984, 753]	4869	[5259, 2276]
124	[243, 244]	1706	[1226, 2574]	3288	[4166, 2000]	4870	[3723, 520]
125	[245, 246]	1707	[2575, 2576]	3289	[3761, 2013]	4871	[5436, 1674]
126	[247, 248]	1708	[2577, 2578]	3290	[4167, 508]	4872	[3608, 4165]
127	[249, 250]	1709	[2579, 1054]	3291	[4168, 4169]	4873	[5330, 225]
128	[251, 252]	1710	[2580, 2581]	3292	[4170, 1765]	4874	[5437, 5438]
129	[253, 254]	1711	[2582, 2583]	3293	[3846, 4171]	4875	[4226, 1956]
130	[255, 256]	1712	[2584, 2585]	3294	[4172, 1789]	4876	[3909, 1933]
131	[257, 258]	1713	[2586, 2587]	3295	[4173, 620]	4877	[3796, 236]
132	[259, 260]	1714	[2588, 2589]	3296	[632, 3640]	4878	[5439, 2290]
133	[261, 262]	1715	[2590, 2591]	3297	[1682, 156]	4879	[5374, 3750]
134	[263, 264]	1716	[2592, 2593]	3298	[2031, 3877]	4880	[1794, 1599]
135	[265, 266]	1717	[2594, 455]	3299	[4174, 4175]	4881	[744, 1586]
136	[267, 268]	1718	[2595, 2596]	3300	[4115, 3633]	4882	[5440, 2179]
137	[269, 270]	1719	[2597, 2598]	3301	[2092, 2110]	4883	[5441, 5377]
138	[271, 272]	1720	[2599, 2600]	3302	[4176, 4177]	4884	[4191, 2130]
139	[273, 274]	1721	[2601, 2602]	3303	[3859, 1820]	4885	[235, 5230]

140	[275, 276]	1722	[2603, 2604]	3304	[3958, 1872]	4886	[1749, 1846]
141	[277, 100]	1723	[2605, 2606]	3305	[4178, 138]	4887	[5277, 1857]
142	[278, 279]	1724	[2607, 2608]	3306	[3973, 239]	4888	[5442, 3700]
143	[280, 281]	1725	[2609, 2610]	3307	[2198, 604]	4889	[4286, 3739]
144	[282, 283]	1726	[2611, 2612]	3308	[677, 822]	4890	[3985, 1792]
145	[284, 285]	1727	[2613, 310]	3309	[2258, 734]	4891	[3986, 2284]
146	[286, 287]	1728	[2614, 2615]	3310	[4179, 582]	4892	[5443, 609]
147	[288, 289]	1729	[2616, 446]	3311	[131, 2226]	4893	[5367, 1893]
148	[290, 291]	1730	[2617, 2502]	3312	[4180, 3670]	4894	[4164, 1901]
149	[292, 293]	1731	[2618, 2619]	3313	[2224, 2005]	4895	[5353, 1866]
150	[294, 295]	1732	[2620, 2621]	3314	[4181, 4182]	4896	[5444, 4253]
151	[296, 297]	1733	[2622, 2623]	3315	[3667, 46]	4897	[2020, 4190]
152	[298, 299]	1734	[2624, 2603]	3316	[3818, 560]	4898	[4211, 1946]
153	[300, 301]	1735	[2625, 2626]	3317	[47, 788]	4899	[1583, 3996]
154	[302, 303]	1736	[2627, 1050]	3318	[4183, 4184]	4900	[5445, 5446]
155	[304, 305]	1737	[2628, 2629]	3319	[4185, 1667]	4901	[616, 3852]
156	[297, 306]	1738	[2630, 2631]	3320	[4186, 3793]	4902	[3575, 2190]
157	[307, 308]	1739	[2632, 2633]	3321	[716, 3597]	4903	[578, 839]
158	[309, 310]	1740	[2634, 994]	3322	[2226, 2070]	4904	[5447, 1626]
159	[306, 311]	1741	[2635, 2476]	3323	[4187, 4012]	4905	[2025, 1997]
160	[312, 313]	1742	[2636, 1078]	3324	[1871, 2147]	4906	[2306, 5448]
161	[314, 315]	1743	[2637, 2638]	3325	[4188, 2084]	4907	[1997, 2227]
162	[316, 317]	1744	[2639, 2640]	3326	[3878, 816]	4908	[187, 5449]
163	[318, 319]	1745	[2641, 2642]	3327	[2258, 2176]	4909	[5251, 4210]
164	[320, 321]	1746	[2643, 2644]	3328	[4189, 4190]	4910	[5321, 4033]
165	[250, 322]	1747	[2645, 2646]	3329	[3790, 3960]	4911	[5450, 5451]
166	[323, 324]	1748	[2647, 2648]	3330	[833, 3913]	4912	[51, 3593]
167	[325, 326]	1749	[2649, 2483]	3331	[3780, 137]	4913	[5452, 657]
168	[327, 328]	1750	[2650, 2651]	3332	[2114, 2010]	4914	[5453, 690]
169	[329, 330]	1751	[2652, 2653]	3333	[3811, 2104]	4915	[2041, 3646]
170	[331, 332]	1752	[2654, 2655]	3334	[670, 694]	4916	[5454, 800]
171	[333, 334]	1753	[2656, 2657]	3335	[4191, 3649]	4917	[5455, 2102]
172	[335, 336]	1754	[2658, 2655]	3336	[2147, 2078]	4918	[5456, 670]
173	[337, 338]	1755	[2659, 2453]	3337	[3854, 2229]	4919	[4181, 1836]
174	[339, 340]	1756	[2660, 2661]	3338	[3687, 1841]	4920	[228, 2190]
175	[341, 342]	1757	[2662, 2418]	3339	[4192, 3754]	4921	[5457, 4234]
176	[343, 344]	1758	[2493, 2663]	3340	[54, 3767]	4922	[3776, 1879]
177	[345, 346]	1759	[2664, 1349]	3341	[1848, 3882]	4923	[5458, 1704]
178	[347, 348]	1760	[2665, 1162]	3342	[1778, 4193]	4924	[3655, 2288]
179	[349, 350]	1761	[2666, 2667]	3343	[1858, 3756]	4925	[2017, 5244]
180	[351, 352]	1762	[2668, 2669]	3344	[2011, 4099]	4926	[4239, 1609]
181	[353, 354]	1763	[2670, 2671]	3345	[46, 712]	4927	[4113, 633]
182	[355, 356]	1764	[2672, 2673]	3346	[2099, 1963]	4928	[5297, 5285]
183	[357, 358]	1765	[881, 2674]	3347	[1968, 2289]	4929	[2029, 762]

184	[359, 360]	1766	[2675, 2676]	3348	[2193, 507]	4930	[3726, 3698]
185	[361, 362]	1767	[2677, 2678]	3349	[4194, 1925]	4931	[2046, 4256]
186	[363, 364]	1768	[2679, 2680]	3350	[2254, 1685]	4932	[2331, 5349]
187	[365, 366]	1769	[2681, 2682]	3351	[4052, 4056]	4933	[5459, 198]
188	[367, 368]	1770	[2683, 2684]	3352	[3696, 185]	4934	[1744, 1994]
189	[369, 370]	1771	[2685, 19]	3353	[4195, 1698]	4935	[4285, 4272]
190	[371, 372]	1772	[2686, 2687]	3354	[1938, 1971]	4936	[5460, 3986]
191	[373, 374]	1773	[2688, 2689]	3355	[4065, 4026]	4937	[5461, 3953]
192	[375, 376]	1774	[2690, 2691]	3356	[4196, 2041]	4938	[601, 647]
193	[377, 378]	1775	[2692, 2693]	3357	[1862, 3894]	4939	[5348, 508]
194	[379, 380]	1776	[2412, 2694]	3358	[4197, 1677]	4940	[5447, 3704]
195	[381, 382]	1777	[2695, 2696]	3359	[4029, 570]	4941	[3574, 1783]
196	[383, 384]	1778	[2697, 344]	3360	[4198, 4199]	4942	[5462, 3725]
197	[385, 386]	1779	[2698, 1557]	3361	[1992, 4133]	4943	[4101, 4141]
198	[387, 388]	1780	[2699, 2700]	3362	[3800, 4200]	4944	[5463, 5396]
199	[389, 390]	1781	[2701, 2702]	3363	[3938, 2040]	4945	[5464, 4076]
200	[391, 392]	1782	[2703, 2704]	3364	[4201, 543]	4946	[5436, 2002]
201	[393, 394]	1783	[2705, 2706]	3365	[4202, 1702]	4947	[5237, 505]
202	[395, 396]	1784	[2707, 2695]	3366	[1976, 246]	4948	[2220, 3967]
203	[397, 398]	1785	[2708, 2709]	3367	[1637, 3908]	4949	[4069, 1640]
204	[399, 400]	1786	[2710, 2711]	3368	[4203, 846]	4950	[3760, 2282]
205	[401, 260]	1787	[2712, 2713]	3369	[4204, 1869]	4951	[5465, 1780]
206	[402, 403]	1788	[2714, 2715]	3370	[4205, 809]	4952	[5345, 5466]
207	[404, 405]	1789	[2716, 2717]	3371	[4206, 1950]	4953	[5245, 1577]
208	[406, 407]	1790	[2718, 2719]	3372	[2144, 4200]	4954	[149, 1672]
209	[408, 409]	1791	[2720, 2721]	3373	[4139, 1921]	4955	[1685, 3754]
210	[410, 411]	1792	[2722, 2723]	3374	[4207, 3575]	4956	[1856, 515]
211	[412, 413]	1793	[2724, 2690]	3375	[3840, 510]	4957	[5467, 2141]
212	[414, 415]	1794	[2725, 2726]	3376	[4140, 4208]	4958	[1751, 3957]
213	[416, 417]	1795	[2727, 2728]	3377	[4209, 4210]	4959	[2095, 1615]
214	[418, 419]	1796	[1019, 2729]	3378	[3670, 2195]	4960	[5468, 41]
215	[420, 421]	1797	[2730, 2731]	3379	[4211, 1772]	4961	[1794, 1774]
216	[422, 423]	1798	[468, 908]	3380	[4212, 766]	4962	[2256, 5446]
217	[424, 425]	1799	[447, 2732]	3381	[4032, 808]	4963	[2327, 3927]
218	[426, 427]	1800	[2733, 2425]	3382	[1755, 621]	4964	[3741, 2133]
219	[428, 429]	1801	[2734, 2735]	3383	[4213, 3996]	4965	[4128, 1867]
220	[430, 431]	1802	[2736, 2737]	3384	[610, 1776]	4966	[5469, 1743]
221	[432, 433]	1803	[2738, 2739]	3385	[3881, 1849]	4967	[5326, 1798]
222	[434, 435]	1804	[2740, 2741]	3386	[3757, 4004]	4968	[2308, 1615]
223	[436, 437]	1805	[2742, 2743]	3387	[4214, 3884]	4969	[5470, 2000]
224	[438, 439]	1806	[2744, 2745]	3388	[45, 711]	4970	[3761, 3572]
225	[440, 441]	1807	[2574, 2746]	3389	[1979, 718]	4971	[3992, 3578]
226	[442, 443]	1808	[2747, 2748]	3390	[3906, 691]	4972	[1880, 5471]
227	[444, 445]	1809	[2749, 2750]	3391	[155, 764]	4973	[4163, 811]

228	[446, 447]	1810	[2751, 2654]	3392	[3688, 227]	4974	[132, 5472]
229	[448, 449]	1811	[2752, 1495]	3393	[1837, 59]	4975	[4094, 5294]
230	[450, 451]	1812	[2753, 2754]	3394	[4215, 4216]	4976	[2159, 2264]
231	[452, 453]	1813	[2755, 2756]	3395	[3914, 192]	4977	[3808, 3944]
232	[454, 455]	1814	[2589, 2757]	3396	[756, 3793]	4978	[5473, 511]
233	[313, 456]	1815	[2758, 2759]	3397	[4217, 4218]	4979	[5463, 3672]
234	[457, 458]	1816	[1282, 2760]	3398	[4219, 2108]	4980	[5350, 2038]
235	[342, 459]	1817	[2761, 2762]	3399	[4220, 4221]	4981	[1810, 5262]
236	[460, 461]	1818	[2763, 1028]	3400	[4222, 4223]	4982	[5317, 3985]
237	[462, 463]	1819	[2764, 2765]	3401	[211, 796]	4983	[5393, 4089]
238	[464, 465]	1820	[2766, 2767]	3402	[3930, 1954]	4984	[5422, 144]
239	[354, 466]	1821	[2768, 2769]	3403	[600, 3879]	4985	[5474, 5475]
240	[467, 468]	1822	[2770, 2771]	3404	[4224, 4225]	4986	[5299, 659]
241	[469, 470]	1823	[1402, 1478]	3405	[3860, 1618]	4987	[2058, 3569]
242	[471, 472]	1824	[2772, 2773]	3406	[4226, 3803]	4988	[5476, 3739]
243	[473, 474]	1825	[2774, 2775]	3407	[4227, 2030]	4989	[40, 2187]
244	[475, 476]	1826	[2776, 2777]	3408	[3955, 3691]	4990	[5409, 2299]
245	[477, 96]	1827	[1141, 2778]	3409	[2275, 4228]	4991	[5442, 2329]
246	[478, 479]	1828	[2530, 81]	3410	[4229, 1614]	4992	[5460, 682]
247	[480, 481]	1829	[2779, 2780]	3411	[875, 1855]	4993	[5477, 1650]
248	[482, 483]	1830	[1204, 422]	3412	[4230, 1730]	4994	[5478, 206]
249	[484, 485]	1831	[2781, 2443]	3413	[4231, 2293]	4995	[1822, 3623]
250	[486, 487]	1832	[2782, 2783]	3414	[3662, 1982]	4996	[3647, 5446]
251	[488, 489]	1833	[2784, 2785]	3415	[3814, 1786]	4997	[717, 1980]
252	[490, 491]	1834	[901, 2786]	3416	[3939, 1875]	4998	[4160, 2019]
253	[492, 493]	1835	[2787, 2788]	3417	[2118, 4232]	4999	[4072, 2053]
254	[494, 495]	1836	[2789, 2790]	3418	[1988, 523]	5000	[5479, 5480]
255	[496, 487]	1837	[2791, 2792]	3419	[4233, 4234]	5001	[5481, 1741]
256	[497, 498]	1838	[421, 2793]	3420	[749, 2128]	5002	[3747, 2116]
257	[499, 500]	1839	[2794, 2795]	3421	[4235, 3666]	5003	[5439, 5392]
258	[501, 502]	1840	[2796, 2797]	3422	[4236, 2006]	5004	[5482, 690]
259	[503, 504]	1841	[2798, 2799]	3423	[3904, 2065]	5005	[5419, 5387]
260	[505, 506]	1842	[2687, 2797]	3424	[4237, 233]	5006	[4254, 1872]
261	[507, 146]	1843	[2800, 2801]	3425	[2078, 2017]	5007	[1659, 3709]
262	[61, 508]	1844	[2802, 2803]	3426	[2231, 62]	5008	[4119, 2329]
263	[509, 510]	1845	[2571, 2682]	3427	[4238, 2280]	5009	[5483, 3863]
264	[511, 512]	1846	[2804, 2805]	3428	[2138, 1659]	5010	[2036, 4218]
265	[513, 514]	1847	[2806, 1346]	3429	[4239, 1706]	5011	[5484, 3962]
266	[515, 516]	1848	[2807, 2808]	3430	[1747, 218]	5012	[5253, 3655]
267	[517, 518]	1849	[2809, 2810]	3431	[2174, 585]	5013	[5306, 61]
268	[519, 520]	1850	[2811, 2697]	3432	[2006, 2226]	5014	[5485, 5298]
269	[521, 522]	1851	[2812, 2813]	3433	[4162, 871]	5015	[2210, 506]
270	[523, 522]	1852	[2814, 2815]	3434	[4009, 1574]	5016	[5486, 2202]
271	[524, 525]	1853	[2816, 2817]	3435	[1745, 3976]	5017	[3797, 750]

272	[526, 239]	1854	[2818, 1569]	3436	[4240, 3644]	5018	[515, 5342]
273	[527, 216]	1855	[2717, 2819]	3437	[1589, 1860]	5019	[4272, 4141]
274	[528, 529]	1856	[2820, 937]	3438	[3630, 712]	5020	[2150, 2038]
275	[530, 531]	1857	[1468, 2821]	3439	[4241, 2099]	5021	[5246, 4246]
276	[532, 533]	1858	[2822, 2823]	3440	[4242, 133]	5022	[1664, 5487]
277	[534, 535]	1859	[2824, 2825]	3441	[2176, 2299]	5023	[5488, 1883]
278	[536, 192]	1860	[2826, 2827]	3442	[4243, 2080]	5024	[5489, 3775]
279	[537, 538]	1861	[2731, 431]	3443	[4244, 3849]	5025	[5216, 4055]
280	[539, 540]	1862	[2828, 2829]	3444	[1953, 570]	5026	[1775, 611]
281	[541, 542]	1863	[2830, 2831]	3445	[782, 639]	5027	[4154, 5487]
282	[241, 543]	1864	[2349, 2832]	3446	[2010, 1729]	5028	[5408, 596]
283	[544, 545]	1865	[2833, 938]	3447	[3998, 1929]	5029	[3556, 1967]
284	[546, 235]	1866	[2834, 2835]	3448	[3989, 1574]	5030	[5293, 4040]
285	[547, 548]	1867	[2836, 2837]	3449	[3861, 1791]	5031	[686, 1977]
286	[549, 550]	1868	[2838, 2839]	3450	[3801, 2200]	5032	[5344, 703]
287	[551, 505]	1869	[909, 2791]	3451	[4025, 606]	5033	[5490, 5274]
288	[552, 553]	1870	[2840, 2841]	3452	[4245, 3911]	5034	[5427, 2312]
289	[554, 555]	1871	[2842, 2843]	3453	[726, 3962]	5035	[5291, 1939]
290	[556, 557]	1872	[2844, 2845]	3454	[537, 3775]	5036	[5444, 5285]
291	[224, 558]	1873	[2846, 2847]	3455	[3948, 1807]	5037	[5395, 3672]
292	[559, 174]	1874	[2848, 399]	3456	[2235, 4246]	5038	[5459, 190]
293	[560, 561]	1875	[2849, 2401]	3457	[4247, 4248]	5039	[5426, 1730]
294	[562, 563]	1876	[2850, 2851]	3458	[1669, 3717]	5040	[683, 609]
295	[564, 565]	1877	[2569, 2852]	3459	[1707, 708]	5041	[5445, 3648]
296	[525, 566]	1878	[2853, 2854]	3460	[2307, 2095]	5042	[2262, 3690]
297	[567, 568]	1879	[2855, 2856]	3461	[2285, 1582]	5043	[564, 3822]
298	[569, 570]	1880	[2857, 2858]	3462	[2060, 223]	5044	[5491, 3599]
299	[32, 571]	1881	[2859, 2860]	3463	[170, 1842]	5045	[3743, 1980]
300	[572, 573]	1882	[2861, 2862]	3464	[3685, 1728]	5046	[4202, 597]
301	[574, 575]	1883	[2863, 2864]	3465	[1828, 145]	5047	[5492, 1853]
302	[576, 577]	1884	[2865, 2866]	3466	[4039, 1766]	5048	[5493, 5349]
303	[578, 579]	1885	[2867, 2868]	3467	[596, 1702]	5049	[3991, 2215]
304	[580, 581]	1886	[2869, 407]	3468	[4249, 1724]	5050	[5494, 5495]
305	[582, 583]	1887	[94, 2870]	3469	[4078, 1903]	5051	[5496, 5497]
306	[584, 585]	1888	[2871, 291]	3470	[1659, 2322]	5052	[5498, 5472]
307	[586, 235]	1889	[2872, 2873]	3471	[158, 2327]	5053	[5499, 1581]
308	[587, 186]	1890	[2874, 2875]	3472	[3714, 3700]	5054	[2190, 1799]
309	[588, 495]	1891	[2876, 2877]	3473	[4250, 133]	5055	[4243, 1675]
310	[589, 157]	1892	[2878, 2879]	3474	[4129, 3736]	5056	[1723, 5268]
311	[568, 590]	1893	[2880, 2881]	3475	[3555, 2300]	5057	[1926, 3835]
312	[591, 592]	1894	[2882, 2883]	3476	[4251, 2308]	5058	[5500, 1908]
313	[593, 594]	1895	[2884, 2885]	3477	[1962, 2283]	5059	[5501, 3614]
314	[595, 58]	1896	[2886, 2887]	3478	[875, 1794]	5060	[5273, 5502]
315	[596, 597]	1897	[2888, 2889]	3479	[4252, 4253]	5061	[2041, 4290]

316	[598, 599]	1898	[2890, 1231]	3480	[4254, 2147]	5062	[5503, 515]
317	[588, 600]	1899	[2891, 2349]	3481	[4016, 637]	5063	[5504, 3882]
318	[496, 601]	1900	[2892, 2893]	3482	[4255, 4256]	5064	[803, 1753]
319	[602, 247]	1901	[2894, 2895]	3483	[4257, 1724]	5065	[5314, 690]
320	[603, 604]	1902	[2896, 2897]	3484	[2050, 1866]	5066	[5238, 5386]
321	[605, 606]	1903	[1470, 2898]	3485	[4258, 3685]	5067	[5505, 4266]
322	[485, 607]	1904	[1351, 439]	3486	[4259, 2175]	5068	[1992, 3799]
323	[608, 609]	1905	[2899, 2900]	3487	[4260, 591]	5069	[5506, 4135]
324	[610, 611]	1906	[2901, 2902]	3488	[1829, 1825]	5070	[5424, 2121]
325	[612, 613]	1907	[2903, 2488]	3489	[1798, 849]	5071	[2308, 2040]
326	[614, 615]	1908	[2904, 2905]	3490	[4146, 2104]	5072	[5507, 3787]
327	[616, 174]	1909	[2906, 68]	3491	[847, 4261]	5073	[5508, 4211]
328	[617, 46]	1910	[2907, 2908]	3492	[8, 4262]	5074	[822, 710]
329	[618, 619]	1911	[2909, 2910]	3493	[1854, 1789]	5075	[4100, 4272]
330	[620, 621]	1912	[2911, 2912]	3494	[4213, 1584]	5076	[2330, 3596]
331	[605, 622]	1913	[2913, 2405]	3495	[3858, 1992]	5077	[4126, 5312]
332	[623, 624]	1914	[2914, 2915]	3496	[1578, 1784]	5078	[4107, 34]
333	[625, 626]	1915	[2916, 2424]	3497	[4263, 1712]	5079	[5509, 669]
334	[627, 548]	1916	[2917, 2918]	3498	[4089, 3944]	5080	[5510, 700]
335	[628, 629]	1917	[2919, 2920]	3499	[143, 654]	5081	[5412, 5265]
336	[630, 631]	1918	[2921, 2922]	3500	[3607, 2005]	5082	[812, 617]
337	[632, 633]	1919	[2615, 2923]	3501	[2148, 1748]	5083	[2207, 2084]
338	[634, 635]	1920	[2499, 2924]	3502	[4264, 4265]	5084	[5388, 5236]
339	[636, 637]	1921	[2925, 1461]	3503	[4233, 1916]	5085	[5511, 2090]
340	[638, 639]	1922	[2926, 2927]	3504	[2140, 4266]	5086	[5418, 190]
341	[640, 568]	1923	[2928, 2929]	3505	[4267, 4182]	5087	[199, 2110]
342	[580, 641]	1924	[2930, 2791]	3506	[4268, 561]	5088	[5479, 5512]
343	[642, 643]	1925	[2931, 2932]	3507	[3974, 874]	5089	[5513, 5514]
344	[644, 645]	1926	[2933, 2934]	3508	[4269, 4270]	5090	[738, 3923]
345	[646, 647]	1927	[2935, 2936]	3509	[1993, 4099]	5091	[3681, 3820]
346	[648, 649]	1928	[2937, 2938]	3510	[4271, 4272]	5092	[5515, 5502]
347	[650, 651]	1929	[2375, 2939]	3511	[3715, 1818]	5093	[5516, 2290]
348	[652, 653]	1930	[2940, 2450]	3512	[4273, 1799]	5094	[5517, 750]
349	[654, 655]	1931	[2941, 2725]	3513	[2013, 3573]	5095	[800, 3957]
350	[656, 657]	1932	[2942, 910]	3514	[4274, 216]	5096	[5518, 5519]
351	[658, 659]	1933	[2943, 2849]	3515	[41, 1787]	5097	[5260, 1793]
352	[660, 522]	1934	[2944, 2945]	3516	[4275, 1756]	5098	[5369, 1889]
353	[661, 640]	1935	[2946, 2947]	3517	[4183, 4276]	5099	[634, 3631]
354	[523, 662]	1936	[2948, 982]	3518	[1820, 2177]	5100	[2158, 1804]
355	[663, 664]	1937	[2949, 2950]	3519	[4277, 2205]	5101	[1592, 5520]
356	[665, 666]	1938	[2951, 2952]	3520	[3642, 1830]	5102	[5474, 5521]
357	[667, 668]	1939	[2953, 2954]	3521	[4278, 3555]	5103	[2173, 523]
358	[669, 670]	1940	[2955, 2956]	3522	[159, 4023]	5104	[4167, 62]
359	[671, 672]	1941	[2957, 2958]	3523	[506, 818]	5105	[5522, 188]

360	[673, 674]	1942	[1234, 2959]	3524	[4054, 686]	5106	[5385, 2091]
361	[675, 676]	1943	[2960, 2961]	3525	[2074, 3942]	5107	[536, 1770]
362	[584, 504]	1944	[2962, 2963]	3526	[4279, 3805]	5108	[834, 1811]
363	[677, 678]	1945	[2964, 2965]	3527	[4280, 3717]	5109	[5488, 3892]
364	[185, 679]	1946	[2966, 28]	3528	[495, 816]	5110	[5523, 835]
365	[680, 681]	1947	[2967, 2968]	3529	[157, 2327]	5111	[5462, 2243]
366	[682, 683]	1948	[2969, 2970]	3530	[4281, 2168]	5112	[4017, 2049]
367	[684, 685]	1949	[2971, 2972]	3531	[721, 246]	5113	[1725, 772]
368	[686, 687]	1950	[2973, 2974]	3532	[3663, 701]	5114	[2084, 4216]
369	[688, 689]	1951	[2975, 2976]	3533	[4106, 626]	5115	[5484, 727]
370	[690, 691]	1952	[2977, 2725]	3534	[4127, 34]	5116	[5524, 635]
371	[692, 542]	1953	[2978, 2979]	3535	[4282, 746]	5117	[5414, 685]
372	[693, 694]	1954	[2980, 2981]	3536	[139, 4283]	5118	[5302, 5359]
373	[695, 696]	1955	[1329, 2982]	3537	[4284, 4199]	5119	[1973, 3694]
374	[697, 545]	1956	[2983, 2388]	3538	[3838, 672]	5120	[692, 1636]
375	[698, 699]	1957	[2984, 2985]	3539	[128, 165]	5121	[498, 3813]
376	[700, 701]	1958	[2986, 2987]	3540	[4285, 4101]	5122	[5492, 2280]
377	[702, 703]	1959	[1275, 2988]	3541	[4286, 2000]	5123	[5525, 3948]
378	[704, 705]	1960	[1200, 2766]	3542	[4240, 4287]	5124	[5526, 2043]
379	[706, 707]	1961	[1195, 2989]	3543	[4288, 3711]	5125	[5527, 681]
380	[528, 708]	1962	[2990, 1259]	3544	[4289, 4290]	5126	[1972, 5359]
381	[709, 710]	1963	[2991, 2992]	3545	[3946, 3767]	5127	[5528, 4272]
382	[711, 712]	1964	[2993, 2994]	3546	[2313, 619]	5128	[5483, 4089]
383	[713, 714]	1965	[2995, 2996]	3547	[2066, 3786]	5129	[5529, 2168]
384	[715, 716]	1966	[2997, 2998]	3548	[4291, 4292]	5130	[5530, 1925]
385	[717, 718]	1967	[2999, 3000]	3549	[601, 1765]	5131	[5397, 2318]
386	[719, 720]	1968	[1137, 3001]	3550	[4293, 3884]	5132	[5531, 5346]
387	[721, 722]	1969	[1139, 3002]	3551	[1577, 2006]	5133	[194, 3967]
388	[540, 723]	1970	[3003, 2746]	3552	[4294, 4295]	5134	[4284, 5328]
389	[724, 725]	1971	[3004, 3005]	3553	[4296, 4297]	5135	[5532, 136]
390	[726, 727]	1972	[3006, 3007]	3554	[2430, 3219]	5136	[5457, 1916]
391	[728, 729]	1973	[3008, 3009]	3555	[4298, 4299]	5137	[5533, 2236]
392	[730, 731]	1974	[3010, 3011]	3556	[411, 4300]	5138	[5534, 1853]
393	[732, 36]	1975	[3012, 3013]	3557	[4301, 921]	5139	[2166, 587]
394	[733, 734]	1976	[3014, 1424]	3558	[4302, 475]	5140	[5270, 5256]
395	[735, 629]	1977	[3015, 3016]	3559	[4303, 4304]	5141	[5455, 1911]
396	[736, 737]	1978	[1245, 3017]	3560	[4305, 4306]	5142	[3874, 5387]
397	[738, 739]	1979	[3018, 3019]	3561	[4307, 2807]	5143	[5535, 518]
398	[740, 169]	1980	[3020, 3021]	3562	[4308, 4309]	5144	[5536, 871]
399	[741, 742]	1981	[3022, 1151]	3563	[429, 2385]	5145	[530, 214]
400	[743, 744]	1982	[112, 3023]	3564	[4310, 4311]	5146	[4011, 5265]
401	[745, 746]	1983	[981, 3024]	3565	[4312, 4313]	5147	[3700, 3960]
402	[747, 748]	1984	[3025, 3026]	3566	[4314, 4315]	5148	[3952, 1843]
403	[749, 750]	1985	[3027, 3028]	3567	[4316, 4317]	5149	[5358, 2175]

404	[751, 752]	1986	[3029, 121]	3568	[4318, 4319]	5150	[513, 142]
405	[753, 754]	1987	[3030, 951]	3569	[4320, 3487]	5151	[3798, 4133]
406	[755, 756]	1988	[1291, 949]	3570	[4321, 4322]	5152	[5537, 2164]
407	[757, 758]	1989	[3031, 374]	3571	[4323, 2765]	5153	[4112, 511]
408	[759, 760]	1990	[3032, 3033]	3572	[4324, 3224]	5154	[3851, 5218]
409	[761, 240]	1991	[3034, 3035]	3573	[4325, 4326]	5155	[2284, 609]
410	[762, 763]	1992	[3036, 3037]	3574	[1371, 2652]	5156	[3997, 800]
411	[500, 764]	1993	[2746, 2952]	3575	[1199, 1210]	5157	[5538, 1941]
412	[765, 766]	1994	[3038, 3039]	3576	[4327, 4328]	5158	[5378, 1749]
413	[767, 768]	1995	[3040, 309]	3577	[4329, 3089]	5159	[193, 1899]
414	[769, 770]	1996	[3041, 3042]	3578	[2938, 4330]	5160	[5539, 725]
415	[771, 772]	1997	[3043, 1041]	3579	[4331, 4332]	5161	[5540, 3645]
416	[773, 774]	1998	[3044, 3045]	3580	[4333, 4334]	5162	[3919, 2110]
417	[775, 776]	1999	[3046, 3047]	3581	[4335, 4336]	5163	[2054, 5352]
418	[777, 581]	2000	[3048, 2650]	3582	[4337, 4338]	5164	[5443, 3857]
419	[778, 779]	2001	[3049, 3050]	3583	[4339, 363]	5165	[5365, 3767]
420	[780, 547]	2002	[3051, 3052]	3584	[4340, 4341]	5166	[5482, 2135]
421	[781, 782]	2003	[3053, 2974]	3585	[1061, 4325]	5167	[2117, 1655]
422	[522, 151]	2004	[3054, 3055]	3586	[4342, 4343]	5168	[5541, 4051]
423	[777, 641]	2005	[3056, 3057]	3587	[3529, 3038]	5169	[1930, 139]
424	[783, 784]	2006	[3058, 3059]	3588	[2998, 3405]	5170	[774, 5542]
425	[785, 46]	2007	[3060, 3061]	3589	[4344, 2554]	5171	[161, 1584]
426	[786, 231]	2008	[3062, 3063]	3590	[1383, 4345]	5172	[4068, 1857]
427	[787, 788]	2009	[1547, 3064]	3591	[4346, 2501]	5173	[5543, 3765]
428	[789, 790]	2010	[1155, 3065]	3592	[4347, 4348]	5174	[3602, 185]
429	[791, 792]	2011	[3066, 3066]	3593	[4349, 4350]	5175	[5544, 2121]
430	[35, 793]	2012	[2868, 2801]	3594	[4351, 4352]	5176	[4158, 2160]
431	[627, 671]	2013	[2414, 3067]	3595	[4353, 3455]	5177	[5429, 1855]
432	[794, 795]	2014	[3068, 3069]	3596	[4354, 2467]	5178	[3935, 2274]
433	[796, 797]	2015	[3070, 3071]	3597	[1296, 975]	5179	[5545, 4133]
434	[776, 798]	2016	[2875, 3072]	3598	[2760, 4355]	5180	[5332, 2145]
435	[799, 800]	2017	[2845, 75]	3599	[4356, 3350]	5181	[4086, 835]
436	[801, 802]	2018	[3073, 3074]	3600	[4357, 1219]	5182	[4252, 5285]
437	[803, 804]	2019	[3075, 3076]	3601	[4358, 3467]	5183	[5546, 5328]
438	[805, 174]	2020	[3077, 3078]	3602	[4359, 4352]	5184	[1751, 1950]
439	[707, 806]	2021	[3079, 3080]	3603	[4360, 2403]	5185	[5518, 4135]
440	[807, 808]	2022	[3081, 1008]	3604	[4361, 467]	5186	[2278, 2040]
441	[232, 809]	2023	[3082, 3083]	3605	[4362, 4363]	5187	[5516, 5392]
442	[810, 811]	2024	[276, 3084]	3606	[4364, 2525]	5188	[5428, 3807]
443	[812, 45]	2025	[3085, 1403]	3607	[4365, 4366]	5189	[4159, 1864]
444	[813, 814]	2026	[3086, 3087]	3608	[4367, 4368]	5190	[5389, 2030]
445	[815, 816]	2027	[3088, 2367]	3609	[4369, 4370]	5191	[5547, 5548]
446	[817, 818]	2028	[3089, 3090]	3610	[4371, 2773]	5192	[189, 198]
447	[819, 820]	2029	[3091, 1076]	3611	[4372, 4373]	5193	[5549, 2053]

448	[821, 822]	2030	[1518, 64]	3612	[4374, 4317]	5194	[2111, 5252]
449	[823, 507]	2031	[3092, 329]	3613	[4375, 4376]	5195	[5550, 206]
450	[824, 825]	2032	[2945, 2824]	3614	[4377, 4378]	5196	[5551, 3907]
451	[778, 826]	2033	[3093, 3094]	3615	[3523, 1279]	5197	[5552, 1843]
452	[827, 828]	2034	[3095, 2477]	3616	[4379, 4380]	5198	[3648, 3980]
453	[829, 830]	2035	[1386, 3096]	3617	[4381, 4382]	5199	[1888, 2205]
454	[831, 832]	2036	[3097, 1344]	3618	[4383, 4384]	5200	[4198, 5328]
455	[833, 653]	2037	[3098, 3099]	3619	[1417, 21]	5201	[1857, 516]
456	[834, 835]	2038	[3100, 3101]	3620	[4385, 4386]	5202	[3929, 1746]
457	[836, 837]	2039	[3102, 2970]	3621	[2927, 2596]	5203	[5553, 3701]
458	[838, 839]	2040	[3103, 3104]	3622	[4387, 3414]	5204	[4195, 686]
459	[759, 840]	2041	[3105, 1081]	3623	[1298, 4388]	5205	[5473, 56]
460	[841, 676]	2042	[3106, 3107]	3624	[4389, 2882]	5206	[5506, 5519]
461	[842, 843]	2043	[897, 3108]	3625	[4390, 4391]	5207	[4046, 1730]
462	[492, 489]	2044	[3109, 2376]	3626	[4392, 331]	5208	[5554, 5387]
463	[844, 845]	2045	[3110, 3111]	3627	[4393, 4394]	5209	[2097, 3590]
464	[667, 827]	2046	[3112, 3113]	3628	[3009, 935]	5210	[5555, 2270]
465	[846, 847]	2047	[3114, 3115]	3629	[4395, 4396]	5211	[5556, 2310]
466	[640, 848]	2048	[3116, 3117]	3630	[1000, 4309]	5212	[5217, 3655]
467	[521, 662]	2049	[3118, 3119]	3631	[4397, 1229]	5213	[5557, 4012]
468	[849, 850]	2050	[3120, 3121]	3632	[3403, 3441]	5214	[5558, 883]
469	[851, 633]	2051	[3122, 3123]	3633	[4398, 4399]	5215	[5559, 335]
470	[852, 175]	2052	[3124, 2708]	3634	[4400, 4401]	5216	[4586, 4449]
471	[853, 854]	2053	[3125, 3126]	3635	[4402, 4403]	5217	[5560, 2440]
472	[855, 856]	2054	[3127, 3128]	3636	[4404, 3332]	5218	[5561, 5562]
473	[857, 858]	2055	[3129, 2474]	3637	[4405, 2815]	5219	[5563, 119]
474	[859, 772]	2056	[3130, 3131]	3638	[4406, 1217]	5220	[3284, 3140]
475	[860, 861]	2057	[3132, 3133]	3639	[4407, 1563]	5221	[5564, 2428]
476	[862, 172]	2058	[3134, 3135]	3640	[2435, 4408]	5222	[5565, 5566]
477	[863, 864]	2059	[3136, 3137]	3641	[2825, 4409]	5223	[5567, 4582]
478	[865, 866]	2060	[3138, 3139]	3642	[4410, 460]	5224	[5568, 4396]
479	[867, 868]	2061	[3140, 3141]	3643	[4411, 4412]	5225	[1104, 5569]
480	[869, 870]	2062	[3142, 3143]	3644	[4413, 4414]	5226	[5570, 311]
481	[871, 872]	2063	[3144, 1382]	3645	[4415, 4416]	5227	[5571, 2938]
482	[873, 797]	2064	[3145, 3146]	3646	[3104, 4417]	5228	[1537, 947]
483	[874, 875]	2065	[3147, 3148]	3647	[3480, 4418]	5229	[5572, 345]
484	[876, 877]	2066	[3149, 3150]	3648	[3428, 4419]	5230	[1069, 5573]
485	[878, 879]	2067	[3151, 3152]	3649	[4420, 4421]	5231	[4508, 1209]
486	[880, 881]	2068	[3153, 396]	3650	[4422, 3215]	5232	[5574, 3330]
487	[882, 883]	2069	[3154, 3096]	3651	[4423, 1452]	5233	[5575, 3032]
488	[884, 885]	2070	[3059, 3155]	3652	[4424, 4425]	5234	[1039, 3520]
489	[886, 887]	2071	[3156, 2964]	3653	[4426, 4427]	5235	[5576, 4833]
490	[888, 889]	2072	[3157, 3158]	3654	[4428, 2674]	5236	[458, 5577]
491	[890, 891]	2073	[3159, 3160]	3655	[4429, 4430]	5237	[2732, 1476]

492	[892, 893]	2074	[3161, 3162]	3656	[4431, 4432]	5238	[5578, 5579]
493	[894, 895]	2075	[3163, 278]	3657	[4433, 2374]	5239	[5580, 3083]
494	[896, 897]	2076	[3164, 2566]	3658	[4434, 4435]	5240	[4645, 5581]
495	[461, 898]	2077	[3165, 3166]	3659	[4436, 4437]	5241	[5015, 2944]
496	[899, 314]	2078	[3167, 3168]	3660	[405, 1502]	5242	[427, 5582]
497	[900, 901]	2079	[3169, 2528]	3661	[4438, 4439]	5243	[2442, 1125]
498	[902, 903]	2080	[3170, 3171]	3662	[4440, 1531]	5244	[3168, 5583]
499	[904, 905]	2081	[3172, 928]	3663	[4441, 971]	5245	[4929, 3058]
500	[906, 907]	2082	[3173, 284]	3664	[1213, 4442]	5246	[5584, 5585]
501	[908, 909]	2083	[3174, 3122]	3665	[4443, 4444]	5247	[5586, 5587]
502	[910, 911]	2084	[3175, 3176]	3666	[4445, 4446]	5248	[5588, 5589]
503	[912, 913]	2085	[451, 1473]	3667	[3067, 2828]	5249	[5590, 5192]
504	[914, 915]	2086	[3177, 3178]	3668	[4447, 983]	5250	[5583, 2492]
505	[916, 341]	2087	[3179, 3180]	3669	[4448, 4449]	5251	[5591, 1347]
506	[917, 918]	2088	[110, 3181]	3670	[4450, 4451]	5252	[5592, 1481]
507	[919, 920]	2089	[3182, 888]	3671	[1208, 3303]	5253	[5593, 3474]
508	[921, 922]	2090	[3183, 3184]	3672	[4452, 4453]	5254	[5594, 1074]
509	[923, 924]	2091	[3185, 3186]	3673	[4454, 3150]	5255	[5595, 79]
510	[925, 926]	2092	[3187, 348]	3674	[4455, 4456]	5256	[5596, 5597]
511	[927, 928]	2093	[3188, 3189]	3675	[1523, 4457]	5257	[5598, 448]
512	[929, 930]	2094	[3190, 3191]	3676	[4458, 4361]	5258	[5599, 5011]
513	[931, 932]	2095	[3192, 2424]	3677	[4459, 4460]	5259	[3063, 2968]
514	[933, 934]	2096	[3193, 3194]	3678	[4461, 3376]	5260	[5600, 274]
515	[935, 936]	2097	[1381, 1143]	3679	[4462, 4463]	5261	[5601, 5042]
516	[937, 938]	2098	[3195, 2991]	3680	[2382, 4464]	5262	[2629, 5602]
517	[939, 940]	2099	[3196, 3197]	3681	[4465, 4426]	5263	[5603, 5604]
518	[941, 942]	2100	[3198, 3199]	3682	[4466, 4467]	5264	[5605, 5606]
519	[943, 944]	2101	[3200, 3201]	3683	[4468, 4469]	5265	[905, 5607]
520	[945, 946]	2102	[3202, 3203]	3684	[4470, 4471]	5266	[5608, 3133]
521	[947, 948]	2103	[3204, 3205]	3685	[4472, 2406]	5267	[1249, 3156]
522	[949, 950]	2104	[3206, 3207]	3686	[321, 1272]	5268	[5609, 5610]
523	[951, 952]	2105	[3083, 3208]	3687	[4473, 22]	5269	[344, 5611]
524	[953, 954]	2106	[3209, 3210]	3688	[4474, 4475]	5270	[4326, 312]
525	[955, 956]	2107	[3211, 2689]	3689	[2829, 2761]	5271	[5612, 5613]
526	[957, 916]	2108	[3212, 3213]	3690	[4476, 4477]	5272	[5614, 880]
527	[958, 119]	2109	[3214, 3215]	3691	[2959, 4478]	5273	[5615, 4541]
528	[959, 960]	2110	[3216, 3217]	3692	[4479, 2803]	5274	[5616, 5021]
529	[961, 962]	2111	[3218, 3219]	3693	[4480, 4481]	5275	[5617, 4624]
530	[382, 963]	2112	[3220, 2731]	3694	[4482, 381]	5276	[5618, 935]
531	[964, 965]	2113	[3221, 3222]	3695	[4483, 2688]	5277	[5619, 3199]
532	[966, 967]	2114	[122, 1485]	3696	[4484, 363]	5278	[70, 5620]
533	[968, 969]	2115	[3223, 3224]	3697	[4485, 4486]	5279	[4313, 1563]
534	[970, 971]	2116	[3225, 3226]	3698	[4487, 4488]	5280	[5621, 5120]
535	[972, 973]	2117	[3227, 3216]	3699	[4489, 4490]	5281	[5622, 362]

536	[974, 975]	2118	[3228, 3229]	3700	[4491, 4492]	5282	[5623, 75]
537	[976, 977]	2119	[3230, 3231]	3701	[4493, 4494]	5283	[5624, 5625]
538	[978, 979]	2120	[2815, 3232]	3702	[4495, 4456]	5284	[5626, 1221]
539	[980, 981]	2121	[3233, 97]	3703	[4496, 4497]	5285	[4801, 5627]
540	[982, 983]	2122	[3234, 3235]	3704	[4498, 4499]	5286	[4311, 1311]
541	[984, 985]	2123	[1341, 3236]	3705	[4500, 4501]	5287	[4418, 3336]
542	[986, 987]	2124	[3237, 3238]	3706	[4502, 2618]	5288	[2397, 5628]
543	[988, 989]	2125	[2767, 353]	3707	[2517, 386]	5289	[5629, 5630]
544	[990, 991]	2126	[3201, 1568]	3708	[4503, 1296]	5290	[338, 1231]
545	[992, 993]	2127	[3239, 3240]	3709	[4469, 4504]	5291	[5631, 3066]
546	[994, 995]	2128	[3141, 3241]	3710	[4505, 4506]	5292	[4792, 4734]
547	[954, 996]	2129	[3242, 3243]	3711	[4507, 4508]	5293	[5632, 2382]
548	[997, 998]	2130	[3244, 3245]	3712	[4509, 4510]	5294	[5633, 1311]
549	[999, 1000]	2131	[317, 1007]	3713	[4511, 4512]	5295	[4813, 5634]
550	[1001, 1002]	2132	[3246, 1515]	3714	[4513, 117]	5296	[4752, 1113]
551	[1003, 917]	2133	[3247, 3248]	3715	[4514, 3430]	5297	[5635, 967]
552	[1004, 1005]	2134	[3249, 3250]	3716	[4515, 4516]	5298	[5636, 5637]
553	[1006, 1007]	2135	[3251, 3252]	3717	[4517, 4518]	5299	[5103, 2413]
554	[1008, 1009]	2136	[3253, 3254]	3718	[4519, 4520]	5300	[3158, 5638]
555	[1010, 293]	2137	[3255, 2712]	3719	[4521, 4522]	5301	[483, 4824]
556	[1011, 1012]	2138	[3256, 3257]	3720	[4523, 4524]	5302	[5639, 1181]
557	[1013, 1014]	2139	[3258, 1456]	3721	[4525, 2948]	5303	[5640, 5641]
558	[1015, 1016]	2140	[3259, 3260]	3722	[4526, 3432]	5304	[5642, 5643]
559	[1017, 1018]	2141	[1404, 3261]	3723	[4527, 2370]	5305	[5644, 1509]
560	[952, 1019]	2142	[2513, 3262]	3724	[4528, 2996]	5306	[5645, 2454]
561	[1020, 1021]	2143	[1357, 2912]	3725	[66, 4529]	5307	[5646, 2528]
562	[1022, 1023]	2144	[1431, 3263]	3726	[4530, 4531]	5308	[5647, 5648]
563	[1024, 1025]	2145	[3264, 3265]	3727	[1147, 4532]	5309	[5649, 3167]
564	[1026, 1027]	2146	[3266, 2388]	3728	[4533, 4534]	5310	[5650, 2527]
565	[1028, 1029]	2147	[950, 418]	3729	[1065, 3160]	5311	[5651, 1105]
566	[566, 566]	2148	[3267, 3268]	3730	[4535, 4316]	5312	[5652, 4418]
567	[1030, 1031]	2149	[3269, 3270]	3731	[4536, 4537]	5313	[3282, 275]
568	[1032, 1033]	2150	[3271, 3272]	3732	[4538, 3194]	5314	[5653, 3253]
569	[1034, 1035]	2151	[3273, 3274]	3733	[4539, 4540]	5315	[5654, 1438]
570	[1036, 1037]	2152	[3275, 3276]	3734	[4541, 906]	5316	[5655, 5656]
571	[1038, 1039]	2153	[3277, 3278]	3735	[1379, 3170]	5317	[5657, 1368]
572	[1040, 1041]	2154	[3279, 3086]	3736	[2792, 2531]	5318	[5658, 5659]
573	[1042, 1043]	2155	[3280, 2918]	3737	[4542, 2740]	5319	[332, 5660]
574	[1044, 1045]	2156	[3281, 3282]	3738	[4543, 4544]	5320	[5661, 5662]
575	[1046, 1047]	2157	[3283, 3284]	3739	[4545, 4546]	5321	[5663, 5038]
576	[1048, 1049]	2158	[3285, 1464]	3740	[4547, 4548]	5322	[5664, 5665]
577	[1050, 1051]	2159	[3286, 1513]	3741	[4549, 4550]	5323	[5666, 5667]
578	[1052, 1053]	2160	[3287, 3288]	3742	[4551, 1346]	5324	[5668, 3082]
579	[1054, 1055]	2161	[3289, 3290]	3743	[4552, 3304]	5325	[3539, 1450]

580	[1056, 1057]	2162	[3291, 2495]	3744	[4553, 4554]	5326	[4510, 4397]
581	[1058, 1059]	2163	[3292, 3293]	3745	[4555, 4556]	5327	[5669, 5665]
582	[1060, 1061]	2164	[3294, 1272]	3746	[4557, 4558]	5328	[4546, 5670]
583	[1062, 1063]	2165	[3295, 972]	3747	[4559, 3067]	5329	[4432, 2616]
584	[1064, 1065]	2166	[1455, 378]	3748	[4560, 1271]	5330	[5671, 5672]
585	[1066, 1067]	2167	[3296, 3297]	3749	[4561, 1280]	5331	[5673, 1128]
586	[1068, 1069]	2168	[3298, 2955]	3750	[4562, 4563]	5332	[2612, 5674]
587	[1070, 1071]	2169	[3299, 3300]	3751	[4564, 4316]	5333	[5675, 2553]
588	[1072, 1073]	2170	[3301, 3302]	3752	[4565, 3032]	5334	[5676, 5677]
589	[1074, 1075]	2171	[3303, 2872]	3753	[364, 4566]	5335	[5678, 4419]
590	[1031, 296]	2172	[3304, 2370]	3754	[1345, 4567]	5336	[5679, 1463]
591	[1076, 1077]	2173	[3305, 3306]	3755	[4568, 4569]	5337	[2394, 1245]
592	[1078, 1079]	2174	[3307, 2426]	3756	[4570, 4571]	5338	[1335, 5680]
593	[1080, 1081]	2175	[3306, 1131]	3757	[1161, 4373]	5339	[5681, 1566]
594	[1082, 1083]	2176	[3308, 3309]	3758	[4572, 4502]	5340	[5682, 3136]
595	[1084, 1085]	2177	[1049, 1546]	3759	[4573, 4574]	5341	[5683, 4401]
596	[1086, 1087]	2178	[3310, 461]	3760	[4575, 2639]	5342	[4430, 3388]
597	[1088, 1089]	2179	[3311, 1465]	3761	[2866, 4576]	5343	[5684, 2664]
598	[1090, 1091]	2180	[3312, 416]	3762	[4577, 965]	5344	[5685, 3004]
599	[1092, 1093]	2181	[3313, 1223]	3763	[4578, 2375]	5345	[5686, 5687]
600	[1094, 1095]	2182	[3314, 3315]	3764	[4579, 4580]	5346	[5688, 5689]
601	[1096, 1097]	2183	[3316, 1010]	3765	[2715, 4581]	5347	[5690, 5691]
602	[1098, 482]	2184	[3317, 3318]	3766	[254, 4582]	5348	[5692, 4796]
603	[1099, 1100]	2185	[3319, 3320]	3767	[3416, 4583]	5349	[5693, 5694]
604	[1101, 1102]	2186	[2778, 2556]	3768	[4584, 4329]	5350	[5695, 3002]
605	[1103, 1104]	2187	[3321, 3322]	3769	[4585, 4586]	5351	[5696, 4705]
606	[1105, 1106]	2188	[3323, 3324]	3770	[4587, 4588]	5352	[5697, 913]
607	[877, 1107]	2189	[3325, 3326]	3771	[913, 394]	5353	[5698, 5699]
608	[1108, 283]	2190	[2704, 3327]	3772	[4589, 4590]	5354	[5700, 3347]
609	[1109, 1110]	2191	[3328, 1451]	3773	[4591, 4592]	5355	[2608, 3512]
610	[1111, 1112]	2192	[3329, 3330]	3774	[3224, 1528]	5356	[5701, 4909]
611	[1113, 1114]	2193	[3331, 2906]	3775	[4593, 2553]	5357	[2996, 2593]
612	[1115, 1116]	2194	[463, 3332]	3776	[4594, 4595]	5358	[1300, 1331]
613	[1117, 1118]	2195	[3333, 3334]	3777	[2994, 4596]	5359	[5702, 5703]
614	[82, 1119]	2196	[3335, 3336]	3778	[4597, 1552]	5360	[1389, 3433]
615	[1120, 1121]	2197	[3337, 3338]	3779	[4598, 4599]	5361	[4373, 3146]
616	[1122, 1123]	2198	[3339, 3340]	3780	[4600, 271]	5362	[5704, 1420]
617	[466, 890]	2199	[3341, 3342]	3781	[2578, 4601]	5363	[5705, 2881]
618	[1124, 1125]	2200	[3343, 3344]	3782	[4602, 4603]	5364	[3484, 3276]
619	[1126, 1127]	2201	[3345, 3114]	3783	[4604, 4605]	5365	[5082, 2536]
620	[1128, 985]	2202	[3346, 3347]	3784	[3143, 2677]	5366	[2377, 5706]
621	[1129, 1130]	2203	[2700, 3348]	3785	[4606, 4607]	5367	[3324, 2770]
622	[1131, 451]	2204	[3349, 3011]	3786	[1238, 4608]	5368	[5648, 5707]
623	[1132, 1133]	2205	[3350, 3351]	3787	[4609, 4610]	5369	[5708, 5057]

624	[1134, 1135]	2206	[3352, 93]	3788	[4611, 4612]	5370	[4439, 1289]
625	[1136, 1137]	2207	[3353, 3354]	3789	[4613, 4614]	5371	[5099, 1195]
626	[1138, 1139]	2208	[3355, 3356]	3790	[4615, 1527]	5372	[5709, 2764]
627	[1140, 1141]	2209	[2449, 3357]	3791	[4616, 2371]	5373	[5710, 5702]
628	[1142, 1143]	2210	[3358, 2360]	3792	[4617, 2573]	5374	[5711, 82]
629	[1144, 1145]	2211	[3359, 3193]	3793	[4618, 3071]	5375	[5712, 2647]
630	[1146, 1147]	2212	[3360, 3361]	3794	[4619, 3489]	5376	[5713, 4575]
631	[1148, 1149]	2213	[3362, 3363]	3795	[4620, 1042]	5377	[5714, 5715]
632	[1150, 1151]	2214	[3364, 3365]	3796	[4621, 4622]	5378	[5716, 5107]
633	[1152, 1153]	2215	[3366, 3367]	3797	[4623, 2505]	5379	[5717, 4933]
634	[1154, 1155]	2216	[3368, 1378]	3798	[2491, 4525]	5380	[5718, 997]
635	[918, 1156]	2217	[3369, 1361]	3799	[3035, 4624]	5381	[5719, 4341]
636	[1157, 1158]	2218	[3370, 3371]	3800	[4625, 4626]	5382	[965, 4947]
637	[1159, 1160]	2219	[3372, 3373]	3801	[4627, 4628]	5383	[5720, 3292]
638	[1149, 1161]	2220	[3374, 3375]	3802	[4629, 2383]	5384	[887, 3256]
639	[1162, 1163]	2221	[378, 2884]	3803	[4630, 1390]	5385	[5721, 3087]
640	[1164, 1165]	2222	[3376, 3377]	3804	[4631, 2457]	5386	[5722, 5723]
641	[1166, 1167]	2223	[3378, 3379]	3805	[3375, 1318]	5387	[1278, 5724]
642	[1168, 1169]	2224	[3380, 1305]	3806	[4632, 2830]	5388	[419, 1286]
643	[1170, 1171]	2225	[3381, 3382]	3807	[4633, 4634]	5389	[5604, 5145]
644	[1172, 1173]	2226	[2361, 2529]	3808	[4556, 4635]	5390	[5723, 1277]
645	[1174, 1175]	2227	[2354, 1440]	3809	[1443, 4636]	5391	[5725, 3539]
646	[1176, 1177]	2228	[3383, 3384]	3810	[4637, 2572]	5392	[5726, 332]
647	[944, 1178]	2229	[3385, 3386]	3811	[4638, 4639]	5393	[5727, 1443]
648	[1179, 1180]	2230	[3387, 3388]	3812	[4640, 4641]	5394	[5728, 5190]
649	[1181, 1182]	2231	[3389, 3390]	3813	[1114, 4642]	5395	[3391, 2727]
650	[1183, 1184]	2232	[78, 3391]	3814	[4643, 85]	5396	[5729, 5730]
651	[1185, 1186]	2233	[3243, 2491]	3815	[4644, 4645]	5397	[5731, 3058]
652	[1187, 1188]	2234	[3392, 3393]	3816	[4646, 4647]	5398	[1399, 5732]
653	[1189, 1190]	2235	[3394, 2858]	3817	[1555, 4648]	5399	[5733, 5734]
654	[1191, 1192]	2236	[3395, 3396]	3818	[4649, 1020]	5400	[5735, 4762]
655	[281, 1193]	2237	[3397, 3398]	3819	[4650, 4651]	5401	[5736, 4593]
656	[1194, 1195]	2238	[3399, 3400]	3820	[4652, 4653]	5402	[5737, 5738]
657	[1196, 1197]	2239	[3401, 432]	3821	[4654, 3300]	5403	[926, 5739]
658	[1198, 1003]	2240	[3402, 2598]	3822	[4341, 4655]	5404	[5740, 968]
659	[352, 1199]	2241	[2923, 3403]	3823	[4656, 2920]	5405	[5741, 4386]
660	[311, 1200]	2242	[3404, 2851]	3824	[4657, 4658]	5406	[4879, 5742]
661	[1201, 1202]	2243	[3405, 3406]	3825	[4659, 2385]	5407	[5743, 1212]
662	[1203, 1204]	2244	[3407, 1096]	3826	[4660, 4661]	5408	[5744, 1088]
663	[1205, 1206]	2245	[3408, 3409]	3827	[4662, 4663]	5409	[2598, 2479]
664	[1207, 1208]	2246	[3410, 3411]	3828	[4664, 3308]	5410	[5745, 1212]
665	[1209, 1120]	2247	[936, 3412]	3829	[3418, 269]	5411	[5746, 29]
666	[1210, 1211]	2248	[3413, 3414]	3830	[4665, 4666]	5412	[5747, 2688]
667	[1018, 1054]	2249	[3415, 3416]	3831	[4667, 2372]	5413	[5748, 1421]

668	[1212, 1213]	2250	[3417, 3418]	3832	[4668, 4669]	5414	[5749, 1436]
669	[1214, 1215]	2251	[3419, 3420]	3833	[4670, 4671]	5415	[5750, 4877]
670	[1216, 1217]	2252	[3421, 3422]	3834	[4672, 4319]	5416	[5751, 5752]
671	[1218, 410]	2253	[3423, 3424]	3835	[4673, 4674]	5417	[3382, 5753]
672	[1219, 1220]	2254	[3425, 3426]	3836	[4675, 3193]	5418	[5754, 5581]
673	[1221, 1222]	2255	[3427, 3428]	3837	[4676, 1309]	5419	[5090, 2581]
674	[1223, 1224]	2256	[3429, 3430]	3838	[336, 3189]	5420	[5755, 5568]
675	[1225, 957]	2257	[3019, 977]	3839	[2436, 4600]	5421	[5756, 432]
676	[270, 1226]	2258	[1033, 3431]	3840	[4677, 4678]	5422	[5757, 5565]
677	[1227, 1228]	2259	[3432, 3321]	3841	[4679, 4680]	5423	[5758, 4770]
678	[1229, 1230]	2260	[3433, 454]	3842	[4681, 4682]	5424	[5759, 1495]
679	[1231, 1232]	2261	[3434, 3435]	3843	[4683, 3050]	5425	[5760, 5761]
680	[1233, 1234]	2262	[3436, 1337]	3844	[4684, 2825]	5426	[5762, 21]
681	[1235, 1236]	2263	[3437, 3438]	3845	[4685, 4686]	5427	[1273, 4687]
682	[1237, 1238]	2264	[3439, 3440]	3846	[4687, 4688]	5428	[5763, 2776]
683	[1112, 1239]	2265	[3441, 3442]	3847	[2773, 1555]	5429	[2550, 2395]
684	[1240, 1241]	2266	[3443, 3191]	3848	[4689, 4690]	5430	[5764, 4941]
685	[1242, 1243]	2267	[3444, 2902]	3849	[4691, 3437]	5431	[5765, 1047]
686	[1244, 1245]	2268	[1021, 3445]	3850	[4692, 4693]	5432	[3326, 4970]
687	[1246, 1247]	2269	[1339, 955]	3851	[4694, 958]	5433	[5766, 4729]
688	[1248, 1249]	2270	[3446, 3447]	3852	[4695, 4696]	5434	[5767, 2925]
689	[1250, 1251]	2271	[3448, 3449]	3853	[4697, 1119]	5435	[5768, 4646]
690	[1252, 1253]	2272	[3450, 3451]	3854	[4698, 4699]	5436	[5769, 4640]
691	[1254, 1255]	2273	[3452, 3453]	3855	[1557, 3007]	5437	[5770, 409]
692	[1256, 1257]	2274	[2769, 3454]	3856	[4537, 2780]	5438	[5771, 1352]
693	[1258, 1259]	2275	[3455, 901]	3857	[3290, 4700]	5439	[5772, 4839]
694	[1260, 1261]	2276	[2693, 3268]	3858	[443, 2649]	5440	[5773, 1075]
695	[1262, 1263]	2277	[3456, 3457]	3859	[3096, 2900]	5441	[5774, 4827]
696	[1264, 1265]	2278	[3458, 3459]	3860	[4701, 2921]	5442	[5775, 4493]
697	[1266, 1267]	2279	[3460, 3461]	3861	[4702, 4387]	5443	[2987, 1192]
698	[1268, 1027]	2280	[3462, 3031]	3862	[4703, 2476]	5444	[5776, 2987]
699	[1269, 1270]	2281	[3463, 3464]	3863	[72, 1129]	5445	[4804, 1223]
700	[1271, 1184]	2282	[2573, 3465]	3864	[4704, 3538]	5446	[2843, 981]
701	[1272, 1273]	2283	[3069, 3466]	3865	[1377, 4705]	5447	[5777, 5778]
702	[1274, 1275]	2284	[3071, 3467]	3866	[4706, 3509]	5448	[879, 5779]
703	[1276, 1108]	2285	[3468, 3469]	3867	[4707, 944]	5449	[5780, 5781]
704	[1277, 1278]	2286	[3470, 3471]	3868	[4708, 4463]	5450	[5782, 5020]
705	[1279, 1280]	2287	[3472, 3473]	3869	[1435, 4709]	5451	[5783, 5784]
706	[1281, 1282]	2288	[3474, 3475]	3870	[4710, 4711]	5452	[5785, 3036]
707	[1283, 304]	2289	[3199, 3099]	3871	[1095, 4489]	5453	[5786, 5787]
708	[1284, 1285]	2290	[3476, 3137]	3872	[4712, 4565]	5454	[5006, 74]
709	[1286, 1287]	2291	[3477, 3478]	3873	[4713, 4714]	5455	[5788, 992]
710	[1228, 1288]	2292	[3479, 3480]	3874	[4715, 3469]	5456	[5789, 1260]
711	[1289, 1290]	2293	[3481, 3482]	3875	[4716, 2450]	5457	[5790, 3105]

712	[92, 1291]	2294	[3483, 3484]	3876	[4717, 3423]	5458	[5791, 1134]
713	[1292, 89]	2295	[3485, 3463]	3877	[4718, 4719]	5459	[5792, 1406]
714	[1293, 1294]	2296	[3486, 3036]	3878	[907, 2601]	5460	[5793, 2693]
715	[1295, 1296]	2297	[1143, 1094]	3879	[4581, 4720]	5461	[5794, 5776]
716	[1297, 1298]	2298	[1409, 3487]	3880	[4721, 2474]	5462	[5795, 2571]
717	[1299, 1300]	2299	[3488, 3489]	3881	[4722, 4723]	5463	[5796, 5716]
718	[1301, 1302]	2300	[3490, 3491]	3882	[4724, 4725]	5464	[5797, 122]
719	[1303, 1304]	2301	[4, 3492]	3883	[3146, 3112]	5465	[5798, 2701]
720	[1305, 1306]	2302	[3493, 1499]	3884	[4726, 4727]	5466	[5799, 5800]
721	[1307, 1308]	2303	[3489, 2844]	3885	[4728, 4729]	5467	[5801, 4332]
722	[1309, 1310]	2304	[3494, 3495]	3886	[4730, 261]	5468	[5802, 452]
723	[1311, 1312]	2305	[1123, 3496]	3887	[4731, 2522]	5469	[5803, 2574]
724	[1313, 1314]	2306	[3497, 3498]	3888	[4576, 4732]	5470	[5804, 3035]
725	[1315, 1316]	2307	[3499, 2423]	3889	[4607, 3416]	5471	[5805, 5806]
726	[1317, 1318]	2308	[3500, 3501]	3890	[4733, 3205]	5472	[394, 5807]
727	[1319, 1320]	2309	[3502, 1380]	3891	[4734, 4735]	5473	[5808, 5809]
728	[1321, 1322]	2310	[3503, 3504]	3892	[4736, 4737]	5474	[5810, 5811]
729	[1323, 1324]	2311	[3505, 3506]	3893	[4738, 421]	5475	[5812, 5813]
730	[1325, 1326]	2312	[3507, 2475]	3894	[4309, 4739]	5476	[5814, 2649]
731	[1327, 299]	2313	[3508, 2697]	3895	[4740, 3181]	5477	[5815, 2480]
732	[1328, 1329]	2314	[3509, 1522]	3896	[4741, 398]	5478	[5816, 2529]
733	[1330, 1105]	2315	[3510, 3511]	3897	[4742, 4743]	5479	[5817, 2923]
734	[1331, 1332]	2316	[3512, 3395]	3898	[4744, 3136]	5480	[5818, 4522]
735	[1333, 351]	2317	[2387, 3513]	3899	[3189, 4745]	5481	[5819, 4859]
736	[1334, 1335]	2318	[3514, 263]	3900	[3431, 1330]	5482	[5820, 5821]
737	[1336, 1337]	2319	[1349, 3515]	3901	[4746, 1055]	5483	[5822, 2973]
738	[1338, 1339]	2320	[3516, 3517]	3902	[4747, 3091]	5484	[5823, 2832]
739	[1340, 1341]	2321	[1211, 1241]	3903	[4748, 4749]	5485	[5824, 5825]
740	[1342, 1343]	2322	[3257, 3518]	3904	[4750, 1211]	5486	[5826, 1445]
741	[1344, 1345]	2323	[3519, 1281]	3905	[4751, 4752]	5487	[5827, 5828]
742	[1346, 1347]	2324	[3520, 964]	3906	[4753, 4754]	5488	[5829, 5830]
743	[1348, 1349]	2325	[3521, 1334]	3907	[4755, 2583]	5489	[5831, 3308]
744	[1350, 1351]	2326	[2728, 3522]	3908	[1177, 4756]	5490	[5832, 2829]
745	[1352, 1353]	2327	[1075, 3523]	3909	[4757, 1493]	5491	[5833, 2751]
746	[1354, 1355]	2328	[3524, 3381]	3910	[4758, 4688]	5492	[5834, 3147]
747	[1356, 1357]	2329	[3525, 3526]	3911	[4759, 4760]	5493	[1302, 3289]
748	[977, 1358]	2330	[3527, 1010]	3912	[4761, 2939]	5494	[5835, 4467]
749	[1359, 1360]	2331	[3528, 3529]	3913	[4762, 4763]	5495	[963, 5836]
750	[1361, 1362]	2332	[3530, 2537]	3914	[4764, 2771]	5496	[5837, 4375]
751	[1363, 101]	2333	[3531, 3532]	3915	[4765, 2880]	5497	[5838, 3141]
752	[1364, 1365]	2334	[3533, 2840]	3916	[4696, 2768]	5498	[2402, 3030]
753	[1366, 1367]	2335	[3534, 2405]	3917	[4766, 4767]	5499	[5839, 4562]
754	[1368, 1369]	2336	[260, 1148]	3918	[4768, 264]	5500	[2481, 391]
755	[1370, 1371]	2337	[3535, 2531]	3919	[4769, 4770]	5501	[5840, 5841]

756	[1372, 1113]	2338	[3536, 3537]	3920	[4771, 3484]	5502	[5842, 5843]
757	[1373, 1224]	2339	[3538, 2826]	3921	[2777, 4772]	5503	[5579, 4430]
758	[1374, 1375]	2340	[64, 3539]	3922	[4773, 4357]	5504	[5844, 5845]
759	[1376, 1377]	2341	[3540, 3541]	3923	[4588, 4774]	5505	[5846, 4743]
760	[1378, 1379]	2342	[3542, 2640]	3924	[4775, 4728]	5506	[5847, 5848]
761	[1380, 91]	2343	[3543, 1496]	3925	[4776, 2769]	5507	[5849, 3490]
762	[272, 1381]	2344	[3544, 3545]	3926	[305, 3331]	5508	[5850, 4785]
763	[1382, 1383]	2345	[3546, 3547]	3927	[310, 3528]	5509	[3363, 1258]
764	[303, 1384]	2346	[3548, 3549]	3928	[4777, 1024]	5510	[5851, 1494]
765	[1385, 1386]	2347	[3550, 3551]	3929	[4778, 4779]	5511	[472, 3345]
766	[1387, 1049]	2348	[55, 511]	3930	[4780, 4781]	5512	[5852, 1008]
767	[1388, 1389]	2349	[3552, 3553]	3931	[4363, 4782]	5513	[5853, 4645]
768	[1390, 1391]	2350	[3554, 1909]	3932	[4783, 953]	5514	[3028, 5854]
769	[1392, 1393]	2351	[3555, 758]	3933	[4784, 275]	5515	[5855, 1291]
770	[1394, 1395]	2352	[3556, 681]	3934	[4785, 997]	5516	[5628, 2500]
771	[1396, 1397]	2353	[3557, 2231]	3935	[4786, 1551]	5517	[5856, 5049]
772	[1398, 1399]	2354	[38, 1869]	3936	[1481, 1499]	5518	[5857, 5858]
773	[1400, 1401]	2355	[3558, 2197]	3937	[4787, 4788]	5519	[5859, 5860]
774	[1156, 1402]	2356	[3559, 2049]	3938	[4789, 3105]	5520	[1511, 5861]
775	[1403, 1404]	2357	[3560, 3561]	3939	[3438, 2812]	5521	[5862, 5863]
776	[1405, 1406]	2358	[767, 861]	3940	[4790, 1178]	5522	[5864, 5865]
777	[1407, 1400]	2359	[3562, 3563]	3941	[4791, 4792]	5523	[5866, 910]
778	[1408, 1409]	2360	[180, 676]	3942	[4793, 4794]	5524	[5867, 1388]
779	[1410, 1411]	2361	[3564, 238]	3943	[4795, 2660]	5525	[5868, 2639]
780	[1412, 1218]	2362	[3565, 2130]	3944	[1433, 4796]	5526	[5869, 2739]
781	[1413, 1414]	2363	[560, 1961]	3945	[4797, 3082]	5527	[445, 4629]
782	[996, 1415]	2364	[2203, 1920]	3946	[4798, 4318]	5528	[5870, 5117]
783	[1416, 1417]	2365	[775, 1594]	3947	[4799, 1412]	5529	[5871, 4757]
784	[1418, 1419]	2366	[3566, 1839]	3948	[4800, 4801]	5530	[5872, 4967]
785	[1420, 1421]	2367	[1691, 1726]	3949	[4802, 1213]	5531	[4580, 5873]
786	[1422, 1106]	2368	[3567, 3568]	3950	[4803, 4804]	5532	[403, 5874]
787	[1423, 1424]	2369	[3569, 1651]	3951	[2908, 4805]	5533	[5875, 5876]
788	[1053, 1425]	2370	[1801, 3570]	3952	[4806, 4683]	5534	[5877, 4476]
789	[1426, 1071]	2371	[148, 1975]	3953	[4807, 4325]	5535	[4674, 5878]
790	[1427, 1428]	2372	[3571, 758]	3954	[4808, 4809]	5536	[5879, 979]
791	[1429, 287]	2373	[3572, 3573]	3955	[4810, 390]	5537	[4968, 1423]
792	[1430, 1431]	2374	[3574, 3575]	3956	[2803, 482]	5538	[1395, 1103]
793	[1432, 1433]	2375	[3576, 3553]	3957	[74, 4328]	5539	[3119, 2744]
794	[1434, 1435]	2376	[3577, 40]	3958	[4811, 3428]	5540	[5880, 2819]
795	[423, 1436]	2377	[796, 1613]	3959	[4812, 4813]	5541	[5881, 3030]
796	[1437, 1438]	2378	[2222, 3578]	3960	[4814, 4815]	5542	[3232, 4981]
797	[413, 1439]	2379	[3579, 3580]	3961	[4816, 4817]	5543	[5882, 1094]
798	[1440, 1441]	2380	[3581, 3582]	3962	[4818, 4819]	5544	[5883, 3496]
799	[1442, 1443]	2381	[3583, 194]	3963	[4820, 1239]	5545	[2902, 2754]

800	[1444, 1445]	2382	[2022, 840]	3964	[2631, 3488]	5546	[5884, 5885]
801	[1446, 1447]	2383	[3584, 674]	3965	[4821, 4822]	5547	[5886, 1498]
802	[1448, 1449]	2384	[577, 2268]	3966	[2460, 3107]	5548	[3354, 5887]
803	[1450, 1451]	2385	[790, 845]	3967	[4352, 4823]	5549	[5888, 2466]
804	[1452, 1453]	2386	[3585, 2013]	3968	[4824, 4825]	5550	[5889, 4947]
805	[1454, 1455]	2387	[2132, 1868]	3969	[4826, 3034]	5551	[5890, 1097]
806	[1456, 1457]	2388	[57, 2225]	3970	[4827, 4324]	5552	[5891, 5608]
807	[1458, 419]	2389	[3586, 599]	3971	[4828, 4685]	5553	[5892, 2447]
808	[1459, 1460]	2390	[3587, 1744]	3972	[4829, 108]	5554	[5893, 2357]
809	[1461, 1462]	2391	[1946, 9]	3973	[2924, 2705]	5555	[5894, 3488]
810	[1463, 1464]	2392	[1957, 2202]	3974	[4830, 3311]	5556	[5895, 2732]
811	[1465, 1466]	2393	[603, 2199]	3975	[4831, 4832]	5557	[5896, 4754]
812	[1467, 1468]	2394	[3588, 571]	3976	[4833, 4834]	5558	[5897, 3639]
813	[1469, 1470]	2395	[3589, 2080]	3977	[4835, 4836]	5559	[5898, 630]
814	[1471, 1472]	2396	[592, 3590]	3978	[4837, 4838]	5560	[3837, 3741]
815	[1473, 1474]	2397	[212, 797]	3979	[2780, 2950]	5561	[5899, 814]
816	[1073, 1475]	2398	[3591, 3592]	3980	[3430, 2735]	5562	[855, 764]
817	[1476, 1477]	2399	[2238, 3593]	3981	[4839, 366]	5563	[5468, 1786]
818	[1478, 1479]	2400	[3594, 1899]	3982	[433, 4840]	5564	[688, 5416]
819	[1480, 1481]	2401	[1996, 826]	3983	[2706, 4827]	5565	[4124, 5222]
820	[1482, 1483]	2402	[3595, 1607]	3984	[4841, 2722]	5566	[5900, 5512]
821	[1484, 1152]	2403	[3596, 3597]	3985	[4842, 4843]	5567	[5481, 3763]
822	[1485, 1486]	2404	[1920, 3598]	3986	[4844, 1109]	5568	[1738, 2251]
823	[1165, 286]	2405	[3599, 1796]	3987	[4845, 315]	5569	[5901, 5277]
824	[1487, 1488]	2406	[3600, 671]	3988	[4846, 4847]	5570	[5403, 5902]
825	[1489, 1490]	2407	[591, 2097]	3989	[4848, 2434]	5571	[5903, 5219]
826	[1491, 1492]	2408	[3601, 2018]	3990	[4849, 4850]	5572	[3684, 1727]
827	[1493, 1494]	2409	[2172, 487]	3991	[4851, 2619]	5573	[1817, 3598]
828	[1495, 1496]	2410	[669, 693]	3992	[4852, 4853]	5574	[3632, 2106]
829	[1497, 1498]	2411	[3602, 587]	3993	[4854, 2854]	5575	[5904, 834]
830	[1499, 1500]	2412	[3603, 214]	3994	[4855, 4856]	5576	[5905, 3953]
831	[1501, 1502]	2413	[3604, 551]	3995	[4857, 1254]	5577	[837, 5520]
832	[1503, 1504]	2414	[3605, 183]	3996	[946, 4858]	5578	[5554, 2028]
833	[1505, 1506]	2415	[3606, 1674]	3997	[1263, 1433]	5579	[5370, 45]
834	[1507, 1493]	2416	[3607, 1803]	3998	[4859, 3378]	5580	[5906, 4048]
835	[1508, 1509]	2417	[3608, 1901]	3999	[4860, 4861]	5581	[3744, 3816]
836	[1510, 1511]	2418	[3609, 1841]	4000	[3135, 2539]	5582	[3591, 3824]
837	[1512, 1140]	2419	[3567, 2088]	4001	[3155, 2407]	5583	[678, 4088]
838	[1513, 1514]	2420	[553, 3610]	4002	[4862, 1177]	5584	[5553, 3960]
839	[1509, 1515]	2421	[3611, 1697]	4003	[4863, 4864]	5585	[3669, 4210]
840	[1516, 1517]	2422	[3612, 3613]	4004	[80, 4865]	5586	[5907, 4116]
841	[1079, 1518]	2423	[502, 1869]	4005	[4866, 426]	5587	[5900, 5480]
842	[1519, 1176]	2424	[2343, 510]	4006	[4867, 2764]	5588	[4235, 227]
843	[1520, 1521]	2425	[3614, 1975]	4007	[4868, 4869]	5589	[4098, 2078]

844	[1522, 1523]	2426	[844, 631]	4008	[2754, 4870]	5590	[5250, 3873]
845	[1071, 408]	2427	[3615, 145]	4009	[4871, 1227]	5591	[5394, 5218]
846	[1524, 1525]	2428	[56, 1982]	4010	[4872, 4873]	5592	[2115, 3713]
847	[1526, 1527]	2429	[3616, 3617]	4011	[4874, 3252]	5593	[5507, 3555]
848	[1202, 1203]	2430	[1737, 1796]	4012	[3064, 4875]	5594	[3772, 2124]
849	[1528, 361]	2431	[3618, 664]	4013	[4876, 882]	5595	[571, 1590]
850	[1529, 1283]	2432	[3619, 9]	4014	[1005, 1133]	5596	[2014, 2099]
851	[1530, 1531]	2433	[574, 3620]	4015	[4877, 1042]	5597	[4166, 3739]
852	[1532, 257]	2434	[3621, 672]	4016	[4878, 4879]	5598	[5908, 703]
853	[1533, 1534]	2435	[14, 1731]	4017	[4880, 4881]	5599	[5909, 5449]
854	[1535, 1536]	2436	[1935, 550]	4018	[4882, 4883]	5600	[5910, 511]
855	[1451, 1537]	2437	[3622, 3623]	4019	[3496, 4678]	5601	[5537, 3740]
856	[360, 1538]	2438	[3624, 2023]	4020	[1007, 2549]	5602	[2226, 5472]
857	[1539, 1540]	2439	[3625, 1849]	4021	[4506, 448]	5603	[5911, 2043]
858	[1541, 1542]	2440	[2120, 774]	4022	[4884, 2883]	5604	[5524, 3631]
859	[1543, 1544]	2441	[1921, 1583]	4023	[308, 4885]	5605	[5517, 2128]
860	[1057, 1181]	2442	[3626, 3627]	4024	[4886, 4887]	5606	[611, 4228]
861	[1041, 1397]	2443	[3628, 45]	4025	[3162, 2656]	5607	[5309, 5372]
862	[1545, 1511]	2444	[1788, 874]	4026	[4888, 4889]	5608	[5530, 5912]
863	[1546, 1547]	2445	[3629, 1787]	4027	[4890, 4891]	5609	[5504, 1849]
864	[1548, 1549]	2446	[2039, 754]	4028	[2961, 2840]	5610	[5361, 615]
865	[1550, 1551]	2447	[1713, 1695]	4029	[4892, 4893]	5611	[3751, 1781]
866	[1552, 1553]	2448	[3630, 1862]	4030	[4894, 4895]	5612	[4005, 753]
867	[1554, 1555]	2449	[838, 579]	4031	[4896, 4389]	5613	[4242, 3998]
868	[1556, 1557]	2450	[1826, 782]	4032	[4897, 2402]	5614	[2204, 1889]
869	[1558, 1247]	2451	[3631, 2071]	4033	[1562, 4898]	5615	[5913, 5298]
870	[1559, 1560]	2452	[3632, 2090]	4034	[4899, 4900]	5616	[1899, 3967]
871	[1561, 1562]	2453	[2214, 3633]	4035	[4901, 4902]	5617	[4214, 3711]
872	[1563, 1564]	2454	[3634, 3635]	4036	[3471, 4903]	5618	[5404, 703]
873	[1565, 1566]	2455	[3636, 3637]	4037	[4904, 336]	5619	[4274, 1986]
874	[1567, 1568]	2456	[3638, 2283]	4038	[3084, 2675]	5620	[140, 5914]
875	[1569, 933]	2457	[1615, 2041]	4039	[4905, 2677]	5621	[5915, 498]
876	[1570, 1571]	2458	[3639, 871]	4040	[3026, 4906]	5622	[5916, 582]
877	[1572, 754]	2459	[851, 3640]	4041	[1215, 4907]	5623	[5917, 5346]
878	[1573, 1574]	2460	[2206, 617]	4042	[4908, 4909]	5624	[3966, 2221]
879	[1575, 1576]	2461	[813, 2045]	4043	[2947, 2759]	5625	[2127, 750]
880	[852, 1577]	2462	[3641, 2326]	4044	[4910, 4911]	5626	[3606, 2002]
881	[1578, 44]	2463	[3642, 137]	4045	[4912, 4913]	5627	[5257, 4056]
882	[1579, 1580]	2464	[3643, 3644]	4046	[4914, 2687]	5628	[2042, 1964]
883	[1581, 1582]	2465	[1768, 651]	4047	[4915, 4916]	5629	[3597, 1990]
884	[1583, 1584]	2466	[752, 3645]	4048	[4917, 3375]	5630	[5503, 1857]
885	[1585, 1586]	2467	[2248, 192]	4049	[4918, 3333]	5631	[4084, 3718]
886	[1587, 1588]	2468	[1657, 2154]	4050	[4919, 4920]	5632	[3789, 5918]
887	[1589, 1590]	2469	[1616, 3646]	4051	[4921, 4922]	5633	[4090, 2095]

888	[1591, 1592]	2470	[3647, 3648]	4052	[4923, 1444]	5634	[774, 1945]
889	[1593, 1594]	2471	[2129, 3649]	4053	[2788, 919]	5635	[5919, 3923]
890	[1595, 1596]	2472	[216, 59]	4054	[4924, 2465]	5636	[4138, 12]
891	[1597, 840]	2473	[3650, 179]	4055	[3426, 4925]	5637	[2146, 2227]
892	[1598, 1599]	2474	[3651, 622]	4056	[4926, 2973]	5638	[5334, 727]
893	[54, 1600]	2475	[3652, 3653]	4057	[4927, 1356]	5639	[5434, 1611]
894	[1601, 1602]	2476	[3654, 708]	4058	[4928, 4929]	5640	[5920, 8]
895	[1603, 1604]	2477	[617, 711]	4059	[4930, 4931]	5641	[3648, 5287]
896	[1605, 159]	2478	[625, 3655]	4060	[4932, 4933]	5642	[4275, 621]
897	[1606, 1594]	2479	[37, 502]	4061	[4934, 896]	5643	[49, 5451]
898	[582, 1607]	2480	[3656, 2338]	4062	[4935, 4936]	5644	[1, 1670]
899	[1608, 1609]	2481	[1937, 540]	4063	[4937, 4938]	5645	[5921, 1631]
900	[1610, 1611]	2482	[3657, 689]	4064	[4540, 19]	5646	[4282, 5902]
901	[1612, 1613]	2483	[2197, 3658]	4065	[1251, 4701]	5647	[1931, 140]
902	[869, 1614]	2484	[3659, 2104]	4066	[2956, 4939]	5648	[5399, 1879]
903	[1615, 1616]	2485	[3660, 1983]	4067	[4940, 2615]	5649	[5922, 41]
904	[1617, 132]	2486	[3661, 696]	4068	[4941, 1139]	5650	[5923, 2124]
905	[14, 1618]	2487	[3662, 512]	4069	[4942, 3374]	5651	[5924, 1687]
906	[1619, 843]	2488	[541, 1636]	4070	[409, 2751]	5652	[147, 3614]
907	[1620, 1621]	2489	[3663, 3664]	4071	[4943, 4437]	5653	[5925, 3732]
908	[662, 1622]	2490	[702, 532]	4072	[4944, 3453]	5654	[5926, 4225]
909	[549, 820]	2491	[1874, 1580]	4073	[4945, 2961]	5655	[2026, 1846]
910	[1623, 678]	2492	[1634, 159]	4074	[4946, 1068]	5656	[2318, 1586]
911	[1624, 671]	2493	[2061, 742]	4075	[4947, 1512]	5657	[3748, 2164]
912	[1625, 1626]	2494	[1686, 130]	4076	[4948, 939]	5658	[5258, 3786]
913	[1627, 1628]	2495	[1780, 3665]	4077	[1314, 3151]	5659	[4206, 3957]
914	[1629, 573]	2496	[226, 3666]	4078	[4949, 4950]	5660	[874, 1793]
915	[1630, 1631]	2497	[3667, 711]	4079	[4951, 1038]	5661	[3597, 3623]
916	[850, 567]	2498	[1987, 568]	4080	[4952, 1079]	5662	[5454, 1751]
917	[849, 1632]	2499	[3564, 1825]	4081	[114, 2905]	5663	[5927, 3990]
918	[567, 848]	2500	[3668, 832]	4082	[4953, 4954]	5664	[5928, 1715]
919	[1633, 782]	2501	[3669, 2333]	4083	[4955, 4956]	5665	[4152, 2151]
920	[236, 1634]	2502	[3670, 2153]	4084	[4957, 4958]	5666	[5496, 5929]
921	[1635, 1636]	2503	[1898, 194]	4085	[3461, 4959]	5667	[5930, 3899]
922	[1637, 1638]	2504	[3671, 3672]	4086	[4960, 77]	5668	[5931, 1581]
923	[1639, 1640]	2505	[1653, 2091]	4087	[4961, 4962]	5669	[5932, 1897]
924	[1641, 229]	2506	[3673, 3635]	4088	[4903, 4963]	5670	[2249, 54]
925	[1642, 563]	2507	[730, 2335]	4089	[3222, 4964]	5671	[4097, 4182]
926	[1643, 1644]	2508	[3674, 3675]	4090	[4965, 3103]	5672	[4236, 131]
927	[1645, 557]	2509	[3676, 3677]	4091	[4966, 4535]	5673	[5470, 3739]
928	[1646, 1647]	2510	[3678, 3679]	4092	[4967, 2494]	5674	[5933, 5934]
929	[1648, 1649]	2511	[3680, 2268]	4093	[1525, 4968]	5675	[1, 3717]
930	[1650, 1651]	2512	[3681, 3682]	4094	[4969, 1026]	5676	[2156, 2293]
931	[637, 1652]	2513	[3683, 795]	4095	[4970, 2804]	5677	[1974, 2019]

932	[1653, 1654]	2514	[3684, 3685]	4096	[4971, 4972]	5678	[5935, 4230]
933	[1655, 1656]	2515	[3686, 828]	4097	[4973, 3407]	5679	[5936, 736]
934	[1657, 657]	2516	[2033, 770]	4098	[1051, 3169]	5680	[1729, 5542]
935	[1658, 1659]	2517	[3687, 3561]	4099	[2638, 4974]	5681	[5937, 5308]
936	[703, 533]	2518	[3688, 3666]	4100	[4975, 3054]	5682	[5310, 4076]
937	[1660, 44]	2519	[3689, 1816]	4101	[4976, 4977]	5683	[5547, 4216]
938	[1661, 806]	2520	[2064, 3690]	4102	[4978, 110]	5684	[5557, 5265]
939	[1662, 1663]	2521	[3650, 3691]	4103	[4979, 4980]	5685	[5938, 1905]
940	[1664, 1665]	2522	[3692, 3693]	4104	[4981, 4340]	5686	[5505, 2141]
941	[1666, 1667]	2523	[3661, 3694]	4105	[4982, 4983]	5687	[1857, 5342]
942	[1668, 538]	2524	[3695, 2136]	4106	[4984, 4692]	5688	[5939, 5519]
943	[1669, 1670]	2525	[1635, 542]	4107	[4985, 4986]	5689	[5940, 1571]
944	[1671, 1672]	2526	[1977, 2105]	4108	[4987, 3012]	5690	[5941, 4111]
945	[38, 1673]	2527	[658, 526]	4109	[4988, 4755]	5691	[1942, 2041]
946	[1674, 1675]	2528	[1798, 1677]	4110	[4989, 4990]	5692	[5415, 689]
947	[1676, 1677]	2529	[676, 659]	4111	[4991, 4992]	5693	[5375, 753]
948	[1678, 1632]	2530	[2303, 1622]	4112	[4993, 929]	5694	[3742, 2217]
949	[1679, 640]	2531	[1830, 675]	4113	[4994, 114]	5695	[3657, 5416]
950	[659, 239]	2532	[3696, 587]	4114	[4995, 4996]	5696	[5942, 2181]
951	[660, 662]	2533	[3697, 3698]	4115	[4997, 4998]	5697	[5254, 629]
952	[138, 181]	2534	[3699, 639]	4116	[4999, 5000]	5698	[3947, 784]
953	[676, 526]	2535	[3700, 3701]	4117	[5001, 1401]	5699	[5241, 131]
954	[1680, 848]	2536	[3576, 2004]	4118	[5002, 2868]	5700	[4061, 1694]
955	[1681, 1632]	2537	[3702, 3658]	4119	[5003, 4814]	5701	[863, 4218]
956	[675, 181]	2538	[3703, 3704]	4120	[5004, 937]	5702	[5425, 870]
957	[1632, 640]	2539	[2339, 571]	4121	[5005, 5006]	5703	[3863, 3944]
958	[1682, 236]	2540	[3618, 3705]	4122	[5007, 457]	5704	[5943, 5475]
959	[1639, 1683]	2541	[3706, 221]	4123	[5008, 5009]	5705	[5944, 3639]
960	[785, 711]	2542	[1735, 670]	4124	[5010, 5011]	5706	[5544, 3781]
961	[562, 619]	2543	[3707, 798]	4125	[5012, 2427]	5707	[3579, 5247]
962	[1684, 48]	2544	[3708, 1893]	4126	[5013, 4360]	5708	[5441, 2310]
963	[741, 1685]	2545	[2184, 1602]	4127	[5014, 5015]	5709	[2233, 560]
964	[1686, 843]	2546	[2321, 3709]	4128	[5016, 3247]	5710	[793, 3863]
965	[1687, 1688]	2547	[3710, 3711]	4129	[4522, 3128]	5711	[3643, 4287]
966	[1689, 1690]	2548	[3712, 3713]	4130	[5017, 5018]	5712	[5945, 4039]
967	[1691, 772]	2549	[600, 816]	4131	[5019, 5020]	5713	[5943, 5521]
968	[1586, 1649]	2550	[763, 592]	4132	[2671, 3449]	5714	[3775, 2142]
969	[220, 1692]	2551	[3714, 2329]	4133	[1197, 4534]	5715	[5533, 4246]
970	[1693, 1694]	2552	[3715, 673]	4134	[5021, 5022]	5716	[2096, 592]
971	[871, 1695]	2553	[3716, 2004]	4135	[5023, 5024]	5717	[5405, 1652]
972	[1696, 1697]	2554	[3717, 2301]	4136	[5025, 5026]	5718	[5499, 1710]
973	[1698, 687]	2555	[1891, 3718]	4137	[1568, 4902]	5719	[5903, 3915]
974	[1699, 1700]	2556	[3719, 840]	4138	[4774, 5027]	5720	[5946, 3569]
975	[1701, 1702]	2557	[2023, 555]	4139	[5028, 314]	5721	[4058, 5386]

976	[1703, 1704]	2558	[3720, 3721]	4140	[5029, 481]	5722	[5899, 2045]
977	[704, 40]	2559	[3722, 3723]	4141	[5030, 5031]	5723	[709, 4088]
978	[1705, 1706]	2560	[3724, 3725]	4142	[5032, 1331]	5724	[3933, 1931]
979	[1707, 529]	2561	[3628, 617]	4143	[5033, 415]	5725	[824, 4169]
980	[1708, 1709]	2562	[3726, 854]	4144	[5034, 5035]	5726	[4172, 874]
981	[1710, 1582]	2563	[1721, 3727]	4145	[5036, 4703]	5727	[5435, 1670]
982	[1711, 1712]	2564	[1645, 1690]	4146	[5037, 5038]	5728	[4143, 3869]
983	[1713, 872]	2565	[3728, 2345]	4147	[1445, 5039]	5729	[5528, 4101]
984	[1714, 1715]	2566	[3729, 1904]	4148	[5040, 5041]	5730	[4120, 2288]
985	[1716, 1654]	2567	[3685, 3730]	4149	[5042, 5043]	5731	[5534, 2280]
986	[1717, 729]	2568	[3731, 3732]	4150	[5044, 4675]	5732	[5947, 5948]
987	[1718, 1719]	2569	[2059, 1842]	4151	[3297, 77]	5733	[534, 651]
988	[1720, 814]	2570	[166, 770]	4152	[5045, 5046]	5734	[4209, 2333]
989	[1721, 1722]	2571	[2230, 2051]	4153	[5047, 1282]	5735	[5949, 1631]
990	[1723, 1724]	2572	[2082, 1828]	4154	[5048, 5049]	5736	[5950, 3716]
991	[1725, 1726]	2573	[1985, 1934]	4155	[5050, 4994]	5737	[5951, 3765]
992	[860, 768]	2574	[1995, 1596]	4156	[5051, 5052]	5738	[5282, 5308]
993	[1727, 1728]	2575	[3733, 784]	4157	[5053, 1456]	5739	[5952, 5953]
994	[773, 1729]	2576	[3734, 806]	4158	[4566, 2848]	5740	[5954, 220]
995	[1730, 1731]	2577	[3735, 2002]	4159	[5054, 5055]	5741	[5955, 5256]
996	[1732, 163]	2578	[59, 3736]	4160	[5056, 5057]	5742	[2290, 3981]
997	[1623, 822]	2579	[3737, 1803]	4161	[5058, 3446]	5743	[5931, 1710]
998	[501, 38]	2580	[3738, 1690]	4162	[5059, 1357]	5744	[5905, 1843]
999	[1733, 664]	2581	[1865, 2051]	4163	[5060, 3057]	5745	[5410, 501]
1000	[1734, 845]	2582	[1966, 681]	4164	[5061, 5062]	5746	[5956, 61]
1001	[1629, 767]	2583	[3739, 1749]	4165	[5063, 5064]	5747	[5957, 5283]
1002	[1735, 693]	2584	[2342, 1939]	4166	[5065, 3086]	5748	[5958, 3626]
1003	[661, 567]	2585	[3740, 3663]	4167	[5066, 4636]	5749	[2245, 5959]
1004	[1736, 1737]	2586	[3554, 146]	4168	[5067, 5068]	5750	[5911, 811]
1005	[1738, 1739]	2587	[3741, 1868]	4169	[5069, 5070]	5751	[3870, 2208]
1006	[1740, 1741]	2588	[705, 2187]	4170	[2539, 3435]	5752	[4255, 2047]
1007	[1742, 763]	2589	[1591, 837]	4171	[3160, 5071]	5753	[5933, 5960]
1008	[1743, 1744]	2590	[713, 2099]	4172	[5072, 2724]	5754	[4201, 242]
1009	[1745, 1746]	2591	[3742, 2254]	4173	[5073, 4964]	5755	[5961, 1627]
1010	[1747, 1748]	2592	[3743, 718]	4174	[5074, 2937]	5756	[5421, 1624]
1011	[1749, 1750]	2593	[3744, 2301]	4175	[5075, 5076]	5757	[5962, 498]
1012	[799, 1751]	2594	[3745, 3746]	4176	[5077, 3232]	5758	[5927, 3911]
1013	[612, 1588]	2595	[2113, 36]	4177	[5078, 3455]	5759	[5963, 596]
1014	[1752, 1753]	2596	[3615, 507]	4178	[4464, 3029]	5760	[5964, 4111]
1015	[1754, 231]	2597	[3747, 3713]	4179	[5079, 2409]	5761	[2075, 1794]
1016	[1755, 1756]	2598	[790, 631]	4180	[5080, 1323]	5762	[4063, 2197]
1017	[1757, 1758]	2599	[3748, 3740]	4181	[5081, 5082]	5763	[1796, 5262]
1018	[1759, 1577]	2600	[3749, 3750]	4182	[5083, 5084]	5764	[5526, 811]
1019	[1595, 153]	2601	[2266, 779]	4183	[5085, 5086]	5765	[5965, 2341]

1020	[1760, 782]	2602	[3751, 3665]	4184	[5087, 5088]	5766	[4174, 4123]
1021	[587, 679]	2603	[3752, 3597]	4185	[5089, 5090]	5767	[5966, 2248]
1022	[1761, 1762]	2604	[1592, 3753]	4186	[5091, 2412]	5768	[5967, 171]
1023	[1763, 1764]	2605	[742, 3754]	4187	[5092, 1253]	5769	[5968, 247]
1024	[646, 1765]	2606	[744, 2319]	4188	[5093, 2834]	5770	[5969, 5475]
1025	[1766, 1767]	2607	[3755, 3756]	4189	[5094, 5095]	5771	[747, 2142]
1026	[1768, 535]	2608	[3757, 2187]	4190	[5096, 5097]	5772	[5970, 682]
1027	[1769, 1654]	2609	[3758, 3759]	4191	[5098, 5099]	5773	[5971, 1922]
1028	[191, 1770]	2610	[3760, 3761]	4192	[84, 5100]	5774	[5318, 5972]
1029	[1771, 1772]	2611	[3762, 808]	4193	[2709, 5101]	5775	[1936, 5294]
1030	[566, 525]	2612	[787, 48]	4194	[5102, 5103]	5776	[5556, 5377]
1031	[1632, 567]	2613	[1740, 3763]	4195	[1312, 3015]	5777	[2026, 1750]
1032	[525, 525]	2614	[628, 3764]	4196	[4300, 5104]	5778	[5372, 5446]
1033	[662, 151]	2615	[3765, 600]	4197	[4986, 2943]	5779	[1574, 2227]
1034	[1773, 1774]	2616	[2001, 3693]	4198	[5105, 5106]	5780	[5391, 4040]
1035	[1775, 1776]	2617	[3766, 146]	4199	[5107, 5108]	5781	[5302, 648]
1036	[1777, 802]	2618	[2196, 3570]	4200	[5109, 5110]	5782	[5973, 4175]
1037	[1778, 1604]	2619	[1911, 545]	4201	[5111, 2916]	5783	[5549, 866]
1038	[1779, 641]	2620	[663, 3705]	4202	[5112, 5113]	5784	[2334, 731]
1039	[1780, 1781]	2621	[3587, 1807]	4203	[4592, 2446]	5785	[5235, 3929]
1040	[1782, 1783]	2622	[3707, 2317]	4204	[252, 1326]	5786	[5946, 1650]
1041	[43, 1784]	2623	[1847, 3767]	4205	[5114, 5115]	5787	[5974, 4019]
1042	[1785, 214]	2624	[186, 1592]	4206	[356, 2985]	5788	[4258, 1727]
1043	[1786, 1787]	2625	[3768, 1611]	4207	[5116, 1444]	5789	[5975, 2042]
1044	[1788, 1789]	2626	[3769, 42]	4208	[5117, 5118]	5790	[1608, 1706]
1045	[1790, 1791]	2627	[3770, 3626]	4209	[5119, 5100]	5791	[4212, 1905]
1046	[1572, 1792]	2628	[3771, 2226]	4210	[5120, 5121]	5792	[5430, 5386]
1047	[1793, 1794]	2629	[520, 161]	4211	[5122, 1218]	5793	[4280, 1670]
1048	[1795, 1796]	2630	[3772, 3773]	4212	[5123, 2901]	5794	[5976, 32]
1049	[589, 1634]	2631	[3774, 1798]	4213	[1087, 4451]	5795	[5977, 5274]
1050	[1797, 820]	2632	[3775, 748]	4214	[5124, 1111]	5796	[40, 4004]
1051	[817, 1798]	2633	[3776, 3777]	4215	[5125, 3411]	5797	[5917, 5466]
1052	[229, 1799]	2634	[3778, 191]	4216	[4711, 5126]	5798	[5978, 1815]
1053	[1800, 1656]	2635	[3779, 3702]	4217	[1542, 302]	5799	[517, 4045]
1054	[1801, 1802]	2636	[3780, 1830]	4218	[5127, 5128]	5800	[5979, 2227]
1055	[1803, 1804]	2637	[3771, 132]	4219	[5129, 2726]	5801	[5980, 188]
1056	[1805, 493]	2638	[3781, 839]	4220	[5130, 2719]	5802	[5461, 1843]
1057	[1806, 1807]	2639	[2122, 163]	4221	[2757, 5131]	5803	[5981, 164]
1058	[572, 767]	2640	[2062, 3665]	4222	[5132, 3523]	5804	[5982, 1911]
1059	[1808, 607]	2641	[3559, 3782]	4223	[5133, 5134]	5805	[5433, 866]
1060	[1809, 599]	2642	[3783, 558]	4224	[5135, 1220]	5806	[2093, 1719]
1061	[1795, 1810]	2643	[3784, 2088]	4225	[5136, 5137]	5807	[1628, 4256]
1062	[1811, 668]	2644	[1727, 3730]	4226	[5138, 3156]	5808	[5983, 1905]
1063	[1812, 1813]	2645	[3785, 1683]	4227	[5139, 2917]	5809	[5446, 3980]

1064	[1805, 489]	2646	[3734, 1816]	4228	[4954, 3551]	5810	[5423, 3691]
1065	[1814, 666]	2647	[176, 808]	4229	[5140, 3016]	5811	[5545, 3799]
1066	[1772, 9]	2648	[2192, 3786]	4230	[5141, 2618]	5812	[4134, 5519]
1067	[1815, 829]	2649	[1912, 2225]	4231	[5142, 4716]	5813	[5979, 775]
1068	[1816, 1817]	2650	[3787, 758]	4232	[5143, 5144]	5814	[5984, 2197]
1069	[1818, 1819]	2651	[1673, 1870]	4233	[470, 3501]	5815	[5985, 1737]
1070	[1680, 568]	2652	[2259, 40]	4234	[5145, 1260]	5816	[5986, 5466]
1071	[842, 130]	2653	[3682, 3788]	4235	[5146, 4811]	5817	[4074, 1741]
1072	[561, 1820]	2654	[2272, 1621]	4236	[287, 259]	5818	[5464, 2338]
1073	[1821, 1822]	2655	[3595, 583]	4237	[5147, 1322]	5819	[4049, 3670]
1074	[1823, 506]	2656	[1886, 1819]	4238	[5148, 2720]	5820	[5987, 220]
1075	[1824, 1825]	2657	[837, 3753]	4239	[5149, 2866]	5821	[5446, 5287]
1076	[1826, 1827]	2658	[3789, 643]	4240	[5150, 5151]	5822	[5303, 596]
1077	[1828, 507]	2659	[3790, 3701]	4241	[5152, 2707]	5823	[5529, 1832]
1078	[1829, 238]	2660	[3791, 2153]	4242	[5153, 263]	5824	[5467, 4266]
1079	[1830, 138]	2661	[3792, 3793]	4243	[5154, 1564]	5825	[1776, 4228]
1080	[1831, 1832]	2662	[3794, 1739]	4244	[5155, 5156]	5826	[5988, 5426]
1081	[1701, 597]	2663	[3795, 1956]	4245	[5157, 5158]	5827	[5907, 729]
1082	[1833, 246]	2664	[3796, 156]	4246	[3001, 5159]	5828	[4125, 4073]
1083	[498, 1834]	2665	[2071, 1729]	4247	[5160, 5161]	5829	[5989, 5990]
1084	[1835, 1836]	2666	[3797, 2128]	4248	[5162, 5163]	5830	[5991, 3677]
1085	[1837, 1838]	2667	[3798, 3799]	4249	[5164, 5165]	5831	[3928, 3896]
1086	[222, 1839]	2668	[3800, 2145]	4250	[5166, 1351]	5832	[5992, 2219]
1087	[1840, 1841]	2669	[1952, 1793]	4251	[5167, 65]	5833	[5993, 2272]
1088	[9, 1842]	2670	[3801, 599]	4252	[5168, 1108]	5834	[4291, 8]
1089	[1843, 1844]	2671	[3802, 571]	4253	[2745, 5169]	5835	[5926, 5438]
1090	[1845, 1846]	2672	[3803, 767]	4254	[4475, 3167]	5836	[5276, 1856]
1091	[1847, 1600]	2673	[2271, 3720]	4255	[1436, 2811]	5837	[5994, 5334]
1092	[1848, 1849]	2674	[1577, 131]	4256	[2441, 5170]	5838	[5401, 4142]
1093	[1850, 1851]	2675	[3804, 1712]	4257	[5171, 5172]	5839	[5995, 553]
1094	[1852, 581]	2676	[1571, 3805]	4258	[5173, 2614]	5840	[5938, 766]
1095	[1620, 645]	2677	[1965, 624]	4259	[5174, 2513]	5841	[487, 647]
1096	[1785, 531]	2678	[1997, 775]	4260	[2762, 1038]	5842	[2126, 4283]
1097	[1853, 1791]	2679	[3806, 3807]	4261	[1358, 5175]	5843	[3968, 4266]
1098	[1854, 874]	2680	[3808, 3809]	4262	[16, 3235]	5844	[5996, 1918]
1099	[1855, 1599]	2681	[3810, 242]	4263	[5176, 5177]	5845	[2237, 5471]
1100	[1856, 1857]	2682	[719, 1804]	4264	[5178, 5179]	5846	[2208, 5548]
1101	[1858, 802]	2683	[3811, 3812]	4265	[5180, 876]	5847	[5379, 565]
1102	[1859, 1860]	2684	[1948, 3813]	4266	[2408, 5181]	5848	[5450, 50]
1103	[1861, 1862]	2685	[3814, 41]	4267	[5182, 4798]	5849	[5949, 847]
1104	[1863, 1731]	2686	[706, 1661]	4268	[1220, 1050]	5850	[5997, 528]
1105	[1779, 581]	2687	[2182, 1672]	4269	[5183, 5184]	5851	[5998, 1709]
1106	[1687, 1764]	2688	[2252, 169]	4270	[5185, 5186]	5852	[735, 3764]
1107	[1571, 1864]	2689	[3815, 3816]	4271	[5187, 4296]	5853	[5957, 5308]

1108	[1865, 1866]	2690	[3787, 2300]	4272	[5188, 5189]	5854	[5901, 1856]
1109	[1867, 1868]	2691	[2079, 3817]	4273	[3050, 18]	5855	[5999, 136]
1110	[1869, 1870]	2692	[3818, 1960]	4274	[5190, 2880]	5856	[5431, 1652]
1111	[1871, 1872]	2693	[3819, 44]	4275	[5191, 5192]	5857	[5996, 1663]
1112	[1873, 58]	2694	[3820, 3653]	4276	[5193, 5194]	5858	[4247, 3994]
1113	[1874, 1875]	2695	[3821, 3822]	4277	[5195, 4378]	5859	[4155, 3582]
1114	[1876, 1877]	2696	[3823, 3824]	4278	[5196, 3301]	5860	[6000, 2154]
1115	[1878, 1879]	2697	[3825, 1621]	4279	[4990, 2855]	5861	[491, 2047]
1116	[1880, 1881]	2698	[3826, 3617]	4280	[5197, 5198]	5862	[5535, 4045]
1117	[1882, 1883]	2699	[3827, 2199]	4281	[5199, 1040]	5863	[5940, 1964]
1118	[1884, 1775]	2700	[2171, 1810]	4282	[5200, 5201]	5864	[6001, 2160]
1119	[1885, 1607]	2701	[3803, 573]	4283	[4622, 5202]	5865	[4196, 1616]
1120	[1886, 674]	2702	[1815, 2246]	4284	[5203, 5086]	5866	[5383, 796]
1121	[1862, 1887]	2703	[3828, 2258]	4285	[5204, 5030]	5867	[4064, 547]
1122	[1888, 1889]	2704	[184, 500]	4286	[5205, 1197]	5868	[6002, 2062]
1123	[1890, 1872]	2705	[3829, 1622]	4287	[5206, 5207]	5869	[6003, 5438]
1124	[1891, 1892]	2706	[3605, 3693]	4288	[5208, 4953]	5870	[5373, 5302]
1125	[1885, 583]	2707	[786, 3830]	4289	[1531, 2487]	5871	[2242, 3725]
1126	[1893, 1894]	2708	[836, 1592]	4290	[5104, 5209]	5872	[5485, 4265]
1127	[575, 1895]	2709	[3831, 161]	4291	[5210, 5211]	5873	[2142, 6004]
1128	[1896, 1897]	2710	[3832, 3833]	4292	[5212, 4782]	5874	[748, 2143]
1129	[144, 655]	2711	[3834, 3835]	4293	[5213, 5116]	5875	[5932, 832]
1130	[1898, 1899]	2712	[2319, 1649]	4294	[783, 3759]	5876	[3961, 727]
1131	[129, 843]	2713	[8, 3836]	4295	[1641, 2190]	5877	[6005, 171]
1132	[1900, 1901]	2714	[3837, 1867]	4296	[230, 3830]	5878	[6006, 5934]
1133	[1902, 1903]	2715	[3838, 3839]	4297	[3885, 2274]	5879	[5963, 1701]
1134	[1586, 1904]	2716	[3558, 3702]	4298	[695, 3694]	5880	[2101, 5218]
1135	[1905, 1906]	2717	[3840, 2134]	4299	[4030, 244]	5881	[5278, 2119]
1136	[1907, 1908]	2718	[3841, 3782]	4300	[763, 2097]	5882	[6007, 1620]
1137	[145, 1909]	2719	[3842, 1647]	4301	[5214, 1637]	5883	[5501, 148]
1138	[1910, 1911]	2720	[2319, 1904]	4302	[5215, 862]	5884	[4215, 5548]
1139	[1912, 58]	2721	[1843, 3843]	4303	[5216, 3754]	5885	[5221, 2215]
1140	[505, 817]	2722	[3844, 3845]	4304	[657, 3798]	5886	[6008, 4062]
1141	[1913, 1596]	2723	[2073, 3846]	4305	[3758, 784]	5887	[1698, 1977]
1142	[1914, 746]	2724	[3847, 2079]	4306	[4070, 561]	5888	[2052, 4105]
1143	[239, 505]	2725	[3552, 2004]	4307	[1754, 3830]	5889	[6009, 2124]
1144	[1915, 1916]	2726	[2135, 691]	4308	[5217, 626]	5890	[6010, 4048]
1145	[1917, 1918]	2727	[157, 159]	4309	[2297, 157]	5891	[6011, 3599]
1146	[1919, 1920]	2728	[1821, 3597]	4310	[2304, 604]	5892	[4001, 2287]
1147	[1921, 161]	2729	[2008, 583]	4311	[1814, 737]	5893	[6012, 5912]
1148	[1852, 641]	2730	[3848, 3849]	4312	[3724, 2243]	5894	[6013, 1780]
1149	[1922, 1923]	2731	[3850, 491]	4313	[1759, 175]	5895	[4130, 3965]
1150	[1924, 1925]	2732	[818, 1677]	4314	[1845, 1750]	5896	[6014, 2251]
1151	[1926, 1927]	2733	[3851, 1700]	4315	[3708, 2023]	5897	[6015, 1561]

1152	[1928, 1929]	2734	[559, 3852]	4316	[1743, 1807]	5898	[6016, 1148]
1153	[1930, 1931]	2735	[1706, 3761]	4317	[4010, 3788]	5899	[6017, 3546]
1154	[1932, 1933]	2736	[3853, 2065]	4318	[3654, 529]	5900	[6018, 3348]
1155	[546, 1934]	2737	[620, 1756]	4319	[3575, 229]	5901	[6019, 1289]
1156	[1935, 820]	2738	[3854, 3833]	4320	[2325, 36]	5902	[6020, 6021]
1157	[1936, 1937]	2739	[2034, 225]	4321	[1642, 619]	5903	[6022, 3316]
1158	[1938, 1939]	2740	[3855, 768]	4322	[4237, 809]	5904	[6023, 4484]
1159	[1940, 1941]	2741	[553, 3856]	4323	[1699, 5218]	5905	[6024, 2802]
1160	[1942, 1616]	2742	[608, 3857]	4324	[819, 550]	5906	[6025, 2993]
1161	[1943, 1944]	2743	[3858, 3798]	4325	[1742, 591]	5907	[6026, 5115]
1162	[1818, 674]	2744	[3859, 577]	4326	[1810, 2326]	5908	[6027, 2953]
1163	[1729, 1945]	2745	[3860, 1731]	4327	[4293, 3711]	5909	[6028, 6029]
1164	[1681, 850]	2746	[164, 1944]	4328	[1872, 2078]	5910	[6030, 6031]
1165	[526, 551]	2747	[3768, 3723]	4329	[3621, 3839]	5911	[4471, 1304]
1166	[1946, 221]	2748	[3861, 2281]	4330	[5219, 2183]	5912	[6032, 4390]
1167	[1947, 1948]	2749	[1822, 1990]	4331	[5220, 864]	5913	[2936, 6033]
1168	[1949, 514]	2750	[3862, 1586]	4332	[5221, 3633]	5914	[274, 2472]
1169	[800, 1950]	2751	[2211, 2007]	4333	[3673, 5222]	5915	[6034, 1114]
1170	[1951, 12]	2752	[1705, 1609]	4334	[5223, 2112]	5916	[6035, 6036]
1171	[1952, 875]	2753	[1610, 3723]	4335	[5224, 5225]	5917	[6037, 6038]
1172	[1953, 1954]	2754	[1575, 1582]	4336	[5226, 4223]	5918	[6039, 6040]
1173	[1955, 737]	2755	[714, 1963]	4337	[3678, 5227]	5919	[6041, 1140]
1174	[1956, 573]	2756	[3863, 3809]	4338	[5228, 4023]	5920	[6042, 5130]
1175	[1957, 247]	2757	[1863, 1618]	4339	[5229, 3682]	5921	[6043, 3262]
1176	[1806, 1744]	2758	[3864, 2095]	4340	[734, 2299]	5922	[6044, 4665]
1177	[1958, 1959]	2759	[1790, 2281]	4341	[1800, 594]	5923	[6045, 6046]
1178	[1960, 1961]	2760	[2030, 763]	4342	[4081, 4290]	5924	[6047, 2672]
1179	[1962, 1963]	2761	[503, 585]	4343	[1991, 3798]	5925	[6048, 4371]
1180	[1964, 1864]	2762	[506, 1798]	4344	[1831, 2168]	5926	[6049, 4410]
1181	[1965, 1877]	2763	[3865, 3736]	4345	[1934, 5230]	5927	[6050, 4891]
1182	[1611, 1921]	2764	[2077, 2134]	4346	[5231, 3746]	5928	[3344, 4795]
1183	[1966, 1967]	2765	[3717, 3816]	4347	[5232, 3635]	5929	[6051, 1345]
1184	[1968, 1969]	2766	[182, 3693]	4348	[1718, 2094]	5930	[2602, 4410]
1185	[1970, 1971]	2767	[848, 523]	4349	[3924, 5233]	5931	[6052, 2358]
1186	[1972, 648]	2768	[2282, 3572]	4350	[5234, 2177]	5932	[6053, 6054]
1187	[1973, 696]	2769	[593, 1656]	4351	[5235, 3896]	5933	[6055, 3377]
1188	[1974, 1975]	2770	[2003, 3553]	4352	[3683, 1659]	5934	[6056, 6057]
1189	[1976, 722]	2771	[3614, 2019]	4353	[4244, 3954]	5935	[6058, 1413]
1190	[1977, 1978]	2772	[3616, 3866]	4354	[4204, 1673]	5936	[6059, 447]
1191	[1979, 1980]	2773	[1627, 491]	4355	[1934, 5236]	5937	[6060, 4731]
1192	[1981, 1982]	2774	[3867, 601]	4356	[548, 3839]	5938	[6061, 5708]
1193	[540, 1983]	2775	[2302, 2246]	4357	[5237, 240]	5939	[3055, 6062]
1194	[1984, 1876]	2776	[679, 837]	4358	[5238, 4059]	5940	[6063, 380]
1195	[1985, 235]	2777	[3868, 134]	4359	[4259, 2258]	5941	[2790, 5054]

1196	[215, 1986]	2778	[3626, 1923]	4360	[1816, 1920]	5942	[6064, 2763]
1197	[1660, 1784]	2779	[3703, 1626]	4361	[1676, 849]	5943	[6065, 6066]
1198	[818, 849]	2780	[3651, 606]	4362	[598, 2200]	5944	[6067, 4423]
1199	[659, 551]	2781	[1757, 3869]	4363	[1734, 631]	5945	[6068, 1359]
1200	[1987, 848]	2782	[3870, 2084]	4364	[5239, 1977]	5946	[6069, 6070]
1201	[1988, 590]	2783	[3871, 1722]	4365	[4018, 3562]	5947	[2621, 2626]
1202	[1678, 850]	2784	[3872, 3873]	4366	[487, 1765]	5948	[3501, 88]
1203	[590, 522]	2785	[2037, 2151]	4367	[5240, 2317]	5949	[6071, 1358]
1204	[850, 640]	2786	[1611, 520]	4368	[2154, 3798]	5950	[6072, 3054]
1205	[1989, 1990]	2787	[3874, 2028]	4369	[2323, 1683]	5951	[6073, 306]
1206	[1991, 1992]	2788	[3875, 236]	4370	[5241, 2006]	5952	[1173, 3461]
1207	[1587, 613]	2789	[3876, 3877]	4371	[3656, 4076]	5953	[380, 1343]
1208	[1993, 1994]	2790	[3878, 3879]	4372	[4269, 3978]	5954	[6074, 2548]
1209	[46, 1862]	2791	[1622, 1830]	4373	[4037, 3627]	5955	[2795, 4667]
1210	[1995, 153]	2792	[3880, 504]	4374	[3722, 1611]	5956	[319, 125]
1211	[1996, 779]	2793	[547, 671]	4375	[3985, 754]	5957	[6075, 1201]
1212	[794, 1659]	2794	[3881, 3882]	4376	[4089, 3809]	5958	[6076, 4393]
1213	[1710, 1576]	2795	[3883, 2322]	4377	[4114, 223]	5959	[6077, 6078]
1214	[1573, 1997]	2796	[3710, 3884]	4378	[1646, 4149]	5960	[6079, 6080]
1215	[1612, 797]	2797	[1661, 1816]	4379	[4289, 3646]	5961	[6081, 2828]
1216	[1998, 1999]	2798	[807, 177]	4380	[3624, 1893]	5962	[6082, 2694]
1217	[2000, 1749]	2799	[3885, 1644]	4381	[5242, 613]	5963	[6083, 6084]
1218	[154, 500]	2800	[3886, 1741]	4382	[5243, 1851]	5964	[2870, 2624]
1219	[2001, 183]	2801	[3887, 502]	4383	[1616, 4290]	5965	[2462, 1484]
1220	[240, 817]	2802	[33, 792]	4384	[3862, 2319]	5966	[6085, 2683]
1221	[507, 1909]	2803	[2270, 622]	4385	[4263, 1999]	5967	[6086, 5682]
1222	[2002, 1675]	2804	[3589, 1675]	4386	[3986, 683]	5968	[6087, 2653]
1223	[2003, 2004]	2805	[3572, 3888]	4387	[3783, 225]	5969	[4297, 6088]
1224	[2005, 720]	2806	[3889, 707]	4388	[2079, 5244]	5970	[6089, 1112]
1225	[1677, 850]	2807	[3890, 3891]	4389	[5245, 175]	5971	[6090, 1340]
1226	[522, 1622]	2808	[3823, 3592]	4390	[5246, 2236]	5972	[6091, 6092]
1227	[2006, 132]	2809	[1882, 3892]	4391	[3897, 5247]	5973	[1102, 4708]
1228	[673, 1819]	2810	[3893, 2183]	4392	[4083, 489]	5974	[396, 4548]
1229	[1732, 2007]	2811	[1943, 165]	4393	[3619, 221]	5975	[6093, 2350]
1230	[2008, 1607]	2812	[3831, 1583]	4394	[1808, 2306]	5976	[6094, 1078]
1231	[2009, 155]	2813	[712, 3894]	4395	[1900, 4165]	5977	[6095, 3305]
1232	[635, 2010]	2814	[1625, 3704]	4396	[5248, 4149]	5978	[1500, 3410]
1233	[2011, 1994]	2815	[1737, 1810]	4397	[841, 181]	5979	[6096, 1390]
1234	[2012, 2013]	2816	[1689, 557]	4398	[5249, 1636]	5980	[6097, 3478]
1235	[2014, 714]	2817	[3895, 1927]	4399	[247, 4147]	5981	[6098, 2962]
1236	[2015, 682]	2818	[1907, 1655]	4400	[5250, 3917]	5982	[6099, 6100]
1237	[2016, 2017]	2819	[3702, 244]	4401	[5251, 2333]	5983	[6101, 3349]
1238	[654, 2018]	2820	[2139, 1661]	4402	[728, 4116]	5984	[6102, 4434]
1239	[148, 2019]	2821	[3896, 1746]	4403	[5223, 5252]	5985	[6103, 1019]

1240	[2020, 2021]	2822	[1662, 1918]	4404	[5253, 626]	5986	[2473, 6104]
1241	[2022, 760]	2823	[3897, 3580]	4405	[5254, 3764]	5987	[6105, 6106]
1242	[2023, 1894]	2824	[2240, 779]	4406	[5255, 5256]	5988	[6107, 2617]
1243	[607, 2024]	2825	[3898, 3627]	4407	[3737, 2005]	5989	[6108, 3203]
1244	[2025, 1574]	2826	[3781, 579]	4408	[5257, 799]	5990	[889, 6109]
1245	[1958, 533]	2827	[672, 3899]	4409	[2069, 1764]	5991	[6110, 2636]
1246	[753, 1792]	2828	[1797, 550]	4410	[4178, 675]	5992	[3226, 6111]
1247	[2000, 2026]	2829	[240, 506]	4411	[5258, 2067]	5993	[6112, 2432]
1248	[2027, 2028]	2830	[2298, 3900]	4412	[5259, 4228]	5994	[6113, 5162]
1249	[2029, 2030]	2831	[3901, 2133]	4413	[2277, 4045]	5995	[6114, 4528]
1250	[2031, 637]	2832	[511, 1982]	4414	[5260, 875]	5996	[6115, 6116]
1251	[2032, 710]	2833	[3902, 3903]	4415	[3659, 3812]	5997	[6117, 2584]
1252	[2033, 167]	2834	[3904, 3690]	4416	[700, 3664]	5998	[6118, 2364]
1253	[2034, 558]	2835	[1643, 2274]	4417	[2017, 3817]	5999	[4322, 6119]
1254	[221, 1842]	2836	[3905, 242]	4418	[3940, 529]	6000	[6120, 1020]
1255	[1905, 2035]	2837	[3906, 2136]	4419	[2280, 1791]	6001	[4574, 1052]
1256	[2036, 864]	2838	[2169, 699]	4420	[5261, 3698]	6002	[6121, 4443]
1257	[2037, 2038]	2839	[3907, 3908]	4421	[3641, 5262]	6003	[6122, 4600]
1258	[2039, 1792]	2840	[2336, 186]	4422	[4101, 4208]	6004	[979, 2847]
1259	[2040, 2041]	2841	[845, 3727]	4423	[1919, 1817]	6005	[6123, 6124]
1260	[1876, 624]	2842	[3909, 501]	4424	[2344, 2086]	6006	[6125, 5638]
1261	[2042, 1571]	2843	[3577, 705]	4425	[5248, 1647]	6007	[6126, 1174]
1262	[810, 2043]	2844	[3829, 151]	4426	[573, 861]	6008	[3386, 3163]
1263	[2044, 1577]	2845	[237, 1825]	4427	[4292, 4262]	6009	[118, 6127]
1264	[1720, 2045]	2846	[3565, 3649]	4428	[5263, 3903]	6010	[6128, 1146]
1265	[2046, 2047]	2847	[1706, 2282]	4429	[3779, 2197]	6011	[6129, 2766]
1266	[2048, 2049]	2848	[679, 1592]	4430	[4022, 1672]	6012	[6130, 1198]
1267	[2050, 2051]	2849	[162, 2007]	4431	[5264, 2119]	6013	[6131, 6132]
1268	[2052, 196]	2850	[3832, 2229]	4432	[1823, 817]	6014	[6133, 1330]
1269	[865, 2053]	2851	[771, 1726]	4433	[4187, 5265]	6015	[6134, 144]
1270	[2054, 2055]	2852	[3732, 3856]	4434	[3767, 3568]	6016	[6135, 1922]
1271	[2056, 870]	2853	[3910, 3911]	4435	[4292, 3836]	6017	[5945, 3612]
1272	[2057, 533]	2854	[3912, 3913]	4436	[4122, 4175]	6018	[5942, 5312]
1273	[1789, 1793]	2855	[3914, 1770]	4437	[1769, 2091]	6019	[3971, 1704]
1274	[2058, 1650]	2856	[3915, 3708]	4438	[5266, 4253]	6020	[5417, 12]
1275	[2059, 10]	2857	[3916, 3917]	4439	[5267, 635]	6021	[1570, 1964]
1276	[2060, 1839]	2858	[3918, 653]	4440	[4257, 5268]	6022	[6136, 1747]
1277	[1961, 1820]	2859	[3919, 200]	4441	[3638, 1963]	6023	[6137, 1707]
1278	[2061, 1685]	2860	[867, 3637]	4442	[4230, 14]	6024	[6138, 2270]
1279	[152, 1596]	2861	[3920, 3921]	4443	[3706, 9]	6025	[6139, 1908]
1280	[2062, 1781]	2862	[3922, 3923]	4444	[1630, 847]	6026	[3872, 3917]
1281	[2063, 2030]	2863	[3924, 3925]	4445	[3697, 854]	6027	[552, 3732]
1282	[234, 1934]	2864	[3926, 3927]	4446	[5269, 5230]	6028	[6140, 4026]
1283	[138, 676]	2865	[3928, 3929]	4447	[5270, 5271]	6029	[4095, 2026]

1284	[2064, 2065]	2866	[1760, 1827]	4448	[2292, 2157]	6030	[5995, 3732]
1285	[2066, 2067]	2867	[3930, 570]	4449	[3815, 2301]	6031	[5974, 828]
1286	[2068, 165]	2868	[2179, 600]	4450	[5272, 1980]	6032	[1931, 4283]
1287	[2069, 1688]	2869	[3931, 1799]	4451	[544, 3951]	6033	[6141, 5948]
1288	[132, 2070]	2870	[155, 856]	4452	[2328, 3700]	6034	[6142, 4162]
1289	[821, 678]	2871	[3932, 739]	4453	[4102, 2254]	6035	[6143, 2302]
1290	[635, 2071]	2872	[1606, 776]	4454	[1714, 3746]	6036	[6144, 4234]
1291	[181, 659]	2873	[3933, 139]	4455	[5273, 5274]	6037	[2273, 1644]
1292	[2072, 2073]	2874	[3934, 1624]	4456	[5275, 2345]	6038	[3956, 1950]
1293	[2074, 1941]	2875	[499, 155]	4457	[5276, 5277]	6039	[5304, 2145]
1294	[2075, 1855]	2876	[3935, 1644]	4458	[5278, 4232]	6040	[13, 1730]
1295	[2076, 1701]	2877	[3936, 516]	4459	[5279, 2142]	6041	[5531, 5466]
1296	[2077, 510]	2878	[1951, 3937]	4460	[1917, 1663]	6042	[6145, 3850]
1297	[2078, 2079]	2879	[3938, 1615]	4461	[5280, 4209]	6043	[6146, 5426]
1298	[1674, 2080]	2880	[3939, 1580]	4462	[755, 3792]	6044	[5336, 3685]
1299	[2081, 633]	2881	[1853, 2281]	4463	[3901, 1868]	6045	[5341, 2067]
1300	[2082, 823]	2882	[3940, 708]	4464	[4197, 849]	6046	[4132, 3799]
1301	[2083, 2084]	2883	[175, 2006]	4465	[7, 4292]	6047	[6147, 2271]
1302	[2085, 764]	2884	[703, 1959]	4466	[2228, 3833]	6048	[6148, 1627]
1303	[857, 2086]	2885	[1709, 2121]	4467	[168, 2253]	6049	[6149, 5298]
1304	[2087, 1927]	2886	[3941, 3942]	4468	[671, 3839]	6050	[6150, 2341]
1305	[1600, 2088]	2887	[3943, 3944]	4469	[716, 1822]	6051	[5904, 4086]
1306	[766, 1906]	2888	[1696, 3750]	4470	[5281, 630]	6052	[219, 3562]
1307	[2089, 2090]	2889	[1937, 3660]	4471	[5282, 5283]	6053	[5964, 2315]
1308	[1716, 2091]	2890	[1984, 1704]	4472	[5284, 2181]	6054	[4279, 1864]
1309	[2092, 200]	2891	[3945, 216]	4473	[2188, 3903]	6055	[6151, 4123]
1310	[2093, 2094]	2892	[3622, 1990]	4474	[5266, 5285]	6056	[5356, 4116]
1311	[2057, 1959]	2893	[3946, 1600]	4475	[3875, 156]	6057	[5351, 2055]
1312	[2095, 2040]	2894	[3755, 802]	4476	[5286, 5287]	6058	[6152, 191]
1313	[1807, 1994]	2895	[3883, 3709]	4477	[3613, 5288]	6059	[6153, 2062]
1314	[2096, 2097]	2896	[3947, 3759]	4478	[4142, 538]	6060	[5264, 4232]
1315	[2098, 2099]	2897	[2324, 2016]	4479	[4136, 3849]	6061	[6154, 790]
1316	[2100, 1968]	2898	[1684, 788]	4480	[3867, 487]	6062	[6006, 5960]
1317	[2101, 1700]	2899	[3886, 3763]	4481	[1812, 3720]	6063	[5453, 2135]
1318	[2102, 545]	2900	[3600, 548]	4482	[853, 3698]	6064	[5966, 191]
1319	[2103, 2104]	2901	[3712, 2116]	4483	[5289, 2086]	6065	[5546, 4199]
1320	[687, 2105]	2902	[3948, 1744]	4484	[5290, 185]	6066	[1776, 2276]
1321	[2089, 2106]	2903	[3949, 3663]	4485	[4038, 3612]	6067	[6155, 3555]
1322	[2107, 2108]	2904	[3950, 2293]	4486	[5291, 1971]	6068	[6156, 3986]
1323	[2109, 2110]	2905	[697, 3951]	4487	[1940, 3942]	6069	[6157, 3651]
1324	[2111, 2112]	2906	[3692, 183]	4488	[5292, 872]	6070	[5307, 5283]
1325	[2113, 793]	2907	[3952, 3953]	4489	[2068, 1944]	6071	[6158, 5544]
1326	[2114, 2071]	2908	[3767, 2088]	4490	[4067, 3665]	6072	[6159, 3890]
1327	[2115, 2116]	2909	[556, 1690]	4491	[4110, 2315]	6073	[6160, 759]

1328	[2117, 1908]	2910	[1840, 3561]	4492	[3943, 3809]	6074	[6161, 1955]
1329	[806, 1817]	2911	[173, 3852]	4493	[5293, 3845]	6075	[5923, 3773]
1330	[151, 1830]	2912	[2147, 2016]	4494	[5294, 540]	6076	[6162, 1808]
1331	[2009, 500]	2913	[3848, 3954]	4495	[4034, 770]	6077	[11, 3937]
1332	[823, 145]	2914	[3955, 179]	4496	[5240, 798]	6078	[5305, 3781]
1333	[2118, 2119]	2915	[3956, 3957]	4497	[3793, 611]	6079	[5232, 5222]
1334	[2120, 1729]	2916	[3958, 2147]	4498	[1777, 3756]	6080	[4117, 4177]
1335	[2121, 579]	2917	[3959, 1875]	4499	[1850, 5295]	6081	[6163, 2272]
1336	[2122, 2007]	2918	[3820, 3788]	4500	[1601, 2185]	6082	[6164, 2042]
1337	[1763, 1688]	2919	[2329, 3960]	4501	[5243, 5295]	6083	[5402, 171]
1338	[2123, 2124]	2920	[3961, 3962]	4502	[4207, 1783]	6084	[3686, 4019]
1339	[2125, 675]	2921	[3963, 655]	4503	[5296, 1706]	6085	[5915, 1948]
1340	[2126, 140]	2922	[3792, 1775]	4504	[3839, 210]	6086	[6165, 736]
1341	[2127, 2128]	2923	[3964, 2176]	4505	[5297, 4253]	6087	[6166, 5544]
1342	[2129, 2130]	2924	[568, 523]	4506	[4053, 823]	6088	[6141, 6167]
1343	[707, 1816]	2925	[2194, 2079]	4507	[5261, 854]	6089	[6168, 148]
1344	[2131, 2097]	2926	[3827, 604]	4508	[815, 3879]	6090	[6169, 574]
1345	[2132, 2133]	2927	[490, 1628]	4509	[4264, 5298]	6091	[5939, 4135]
1346	[509, 2134]	2928	[1956, 767]	4510	[5299, 526]	6092	[5536, 1713]
1347	[2135, 2136]	2929	[1947, 498]	4511	[1915, 4234]	6093	[6170, 3555]
1348	[2137, 41]	2930	[2218, 3965]	4512	[5300, 3578]	6094	[6171, 1687]
1349	[2138, 795]	2931	[3966, 3967]	4513	[5301, 5302]	6095	[6172, 5475]
1350	[2139, 707]	2932	[3968, 2141]	4514	[5303, 1701]	6096	[5910, 56]
1351	[217, 1748]	2933	[3969, 227]	4515	[3785, 1640]	6097	[6173, 4062]
1352	[2140, 2141]	2934	[3970, 2282]	4516	[4092, 59]	6098	[6174, 497]
1353	[2142, 2143]	2935	[2191, 3830]	4517	[4148, 2229]	6099	[6005, 862]
1354	[2144, 2145]	2936	[178, 3691]	4518	[5275, 1903]	6100	[5337, 1894]
1355	[2146, 775]	2937	[734, 3900]	4519	[5304, 4200]	6101	[6175, 1955]
1356	[1890, 2147]	2938	[3963, 2018]	4520	[5305, 2121]	6102	[4150, 4292]
1357	[2148, 218]	2939	[2102, 3951]	4521	[3988, 3617]	6103	[6176, 2008]
1358	[1704, 1877]	2940	[3971, 1876]	4522	[3765, 495]	6104	[5952, 6177]
1359	[2149, 535]	2941	[3972, 707]	4523	[4229, 870]	6105	[6178, 3948]
1360	[2150, 2151]	2942	[780, 1624]	4524	[1964, 3805]	6106	[4194, 5912]
1361	[2152, 2153]	2943	[3973, 551]	4525	[532, 1959]	6107	[6179, 3670]
1362	[656, 2154]	2944	[1619, 130]	4526	[5306, 2231]	6108	[5550, 4051]
1363	[2155, 670]	2945	[1922, 3627]	4527	[4108, 148]	6109	[743, 2318]
1364	[2156, 2157]	2946	[3586, 2200]	4528	[5307, 5308]	6110	[6009, 3773]
1365	[2158, 720]	2947	[665, 737]	4529	[5309, 2256]	6111	[748, 6004]
1366	[2159, 2160]	2948	[3639, 1713]	4530	[4109, 2261]	6112	[6180, 574]
1367	[2161, 683]	2949	[3974, 1789]	4531	[3749, 1697]	6113	[5968, 2202]
1368	[2162, 2163]	2950	[3975, 3976]	4532	[1920, 2241]	6114	[6181, 2339]
1369	[2164, 700]	2951	[3977, 3978]	4533	[3902, 2189]	6115	[5980, 5449]
1370	[2165, 2077]	2952	[3719, 760]	4534	[1986, 1838]	6116	[3918, 3913]
1371	[2166, 185]	2953	[3979, 3980]	4535	[5310, 2338]	6117	[208, 564]

1372	[1703, 1876]	2954	[3981, 3982]	4536	[5311, 3651]	6118	[6182, 3670]
1373	[2167, 2168]	2955	[2085, 856]	4537	[4080, 629]	6119	[6183, 5953]
1374	[2169, 2170]	2956	[2190, 3983]	4538	[5284, 5312]	6120	[5229, 3820]
1375	[687, 1978]	2957	[3984, 3985]	4539	[4014, 3725]	6121	[6184, 1630]
1376	[488, 493]	2958	[2015, 3986]	4540	[5313, 156]	6122	[6185, 2219]
1377	[2171, 1796]	2959	[3987, 2153]	4541	[761, 505]	6123	[6186, 1743]
1378	[2172, 601]	2960	[3988, 3866]	4542	[3731, 553]	6124	[2250, 1739]
1379	[846, 1631]	2961	[630, 845]	4543	[1989, 3623]	6125	[6187, 4105]
1380	[2173, 590]	2962	[835, 668]	4544	[4082, 1776]	6126	[6188, 1957]
1381	[2174, 504]	2963	[497, 1948]	4545	[2016, 2079]	6127	[5947, 6167]
1382	[586, 1934]	2964	[2030, 591]	4546	[1655, 594]	6128	[6189, 3741]
1383	[2175, 2176]	2965	[1827, 2209]	4547	[4251, 2095]	6129	[6190, 1597]
1384	[577, 2177]	2966	[3945, 1986]	4548	[3975, 1746]	6130	[135, 5972]
1385	[2178, 2179]	2967	[3989, 1997]	4549	[5272, 718]	6131	[6191, 1735]
1386	[791, 34]	2968	[3769, 1787]	4550	[243, 3658]	6132	[6192, 4283]
1387	[2180, 2181]	2969	[2099, 2283]	4551	[5314, 2135]	6133	[1914, 5902]
1388	[1579, 1875]	2970	[3739, 2026]	4552	[5315, 1758]	6134	[2410, 3073]
1389	[212, 1613]	2971	[3910, 3990]	4553	[5316, 1901]	6135	[6193, 2928]
1390	[2182, 150]	2972	[3991, 3633]	4554	[859, 1726]	6136	[6194, 2647]
1391	[1986, 59]	2973	[3819, 1784]	4555	[500, 856]	6137	[6195, 3046]
1392	[1598, 1774]	2974	[1609, 3761]	4556	[2176, 3900]	6138	[6196, 1131]
1393	[2183, 2023]	2975	[3992, 2223]	4557	[5317, 753]	6139	[256, 1082]
1394	[2184, 2185]	2976	[3993, 3994]	4558	[2100, 2288]	6140	[2546, 2448]
1395	[2186, 2187]	2977	[3995, 2135]	4559	[5318, 136]	6141	[3235, 1215]
1396	[2188, 2189]	2978	[161, 3996]	4560	[626, 1968]	6142	[6197, 2586]
1397	[1783, 2190]	2979	[3997, 1751]	4561	[1761, 2]	6143	[5863, 5584]
1398	[2191, 231]	2980	[3625, 3882]	4562	[4170, 647]	6144	[6198, 3459]
1399	[2192, 2067]	2981	[1859, 1590]	4563	[2291, 5319]	6145	[6199, 92]
1400	[494, 600]	2982	[3998, 134]	4564	[5320, 3617]	6146	[6200, 2665]
1401	[2193, 145]	2983	[3972, 1661]	4565	[2131, 592]	6147	[3208, 4523]
1402	[848, 590]	2984	[3864, 2308]	4566	[678, 710]	6148	[6201, 890]
1403	[2194, 2017]	2985	[3629, 42]	4567	[2097, 4020]	6149	[3537, 6202]
1404	[2152, 2195]	2986	[3999, 1724]	4568	[5321, 3891]	6150	[2981, 2386]
1405	[2196, 1802]	2987	[3560, 1841]	4569	[5322, 4276]	6151	[4421, 3027]
1406	[2197, 244]	2988	[1650, 4000]	4570	[4185, 5323]	6152	[2542, 3125]
1407	[2198, 2199]	2989	[3631, 2010]	4571	[5324, 3708]	6153	[6203, 5133]
1408	[1809, 2200]	2990	[4001, 2341]	4572	[5315, 3869]	6154	[6204, 1512]
1409	[2201, 1628]	2991	[2162, 685]	4573	[3876, 637]	6155	[2392, 1269]
1410	[835, 827]	2992	[4002, 3907]	4574	[5325, 5262]	6156	[6205, 4954]
1411	[602, 2202]	2993	[1838, 3736]	4575	[5326, 818]	6157	[6206, 3431]
1412	[2063, 762]	2994	[1908, 594]	4576	[2175, 734]	6158	[6207, 3233]
1413	[2203, 1817]	2995	[4003, 858]	4577	[4168, 825]	6159	[6208, 1562]
1414	[1730, 1618]	2996	[3609, 3561]	4578	[1910, 2102]	6160	[6209, 6210]
1415	[1597, 760]	2997	[705, 4004]	4579	[538, 2142]	6161	[6211, 1336]

1416	[2204, 2205]	2998	[1605, 2327]	4580	[5327, 5328]	6162	[6212, 3497]
1417	[2206, 45]	2999	[4005, 3985]	4581	[520, 1583]	6163	[6213, 5616]
1418	[2207, 2208]	3000	[4006, 1818]	4582	[5329, 2010]	6164	[6214, 1427]
1419	[638, 2209]	3001	[1908, 1656]	4583	[1786, 42]	6165	[6215, 1210]
1420	[2210, 817]	3002	[1911, 3951]	4584	[4180, 2152]	6166	[6216, 4812]
1421	[2211, 163]	3003	[4007, 2]	4585	[4003, 2086]	6167	[3459, 2363]
1422	[2212, 2213]	3004	[668, 828]	4586	[5330, 558]	6168	[6217, 3075]
1423	[831, 1897]	3005	[1813, 4008]	4587	[5331, 1957]	6169	[1261, 5733]
1424	[2214, 2215]	3006	[4009, 1997]	4588	[1899, 2221]	6170	[368, 1374]
1425	[756, 1775]	3007	[4010, 3653]	4589	[1949, 142]	6171	[6218, 6219]
1426	[2216, 759]	3008	[4011, 4012]	4590	[611, 2276]	6172	[5843, 6220]
1427	[2010, 774]	3009	[4013, 823]	4591	[5332, 4200]	6173	[5562, 1072]
1428	[2217, 1685]	3010	[2048, 3782]	4592	[5333, 1713]	6174	[5597, 2969]
1429	[2218, 2219]	3011	[2311, 169]	4593	[2296, 560]	6175	[6221, 2706]
1430	[2220, 2221]	3012	[3855, 861]	4594	[4272, 4208]	6176	[6222, 1062]
1431	[2222, 2223]	3013	[3569, 4000]	4595	[5334, 3962]	6177	[3107, 328]
1432	[2224, 1803]	3014	[3745, 1715]	4596	[1771, 1946]	6178	[6223, 2414]
1433	[1873, 2225]	3015	[1711, 1999]	4597	[5335, 3660]	6179	[4850, 3277]
1434	[1617, 2226]	3016	[2040, 1616]	4598	[5336, 1727]	6180	[6224, 4385]
1435	[2227, 1594]	3017	[1574, 775]	4599	[5337, 555]	6181	[6225, 1381]
1436	[128, 1944]	3018	[4014, 2243]	4600	[181, 526]	6182	[1167, 4999]
1437	[2228, 2229]	3019	[4015, 635]	4601	[2002, 2080]	6183	[3451, 1045]
1438	[2230, 1866]	3020	[4016, 3877]	4602	[4096, 2185]	6184	[6226, 1526]
1439	[766, 2035]	3021	[3871, 3727]	4603	[614, 5338]	6185	[3547, 6227]
1440	[2231, 508]	3022	[4017, 3782]	4604	[3969, 3666]	6186	[6228, 4324]
1441	[1869, 2232]	3023	[220, 3563]	4605	[4268, 1961]	6187	[2895, 2869]
1442	[2233, 1960]	3024	[1709, 3781]	4606	[5339, 3869]	6188	[2458, 480]
1443	[2234, 1802]	3025	[4018, 220]	4607	[5313, 236]	6189	[4444, 478]
1444	[1658, 795]	3026	[668, 4019]	4608	[4153, 54]	6190	[6229, 4459]
1445	[1704, 624]	3027	[711, 1862]	4609	[4231, 2157]	6191	[4642, 347]
1446	[2235, 2236]	3028	[3868, 1929]	4610	[3695, 691]	6192	[2561, 2717]
1447	[2237, 1881]	3029	[3604, 239]	4611	[3784, 3568]	6193	[6230, 1947]
1448	[2238, 52]	3030	[2125, 138]	4612	[862, 5340]	6194	[6231, 2192]
1449	[2239, 1946]	3031	[740, 2253]	4613	[5341, 3786]	6195	[6232, 3650]
1450	[2240, 826]	3032	[3571, 2300]	4614	[4043, 5342]	6196	[6233, 778]
1451	[644, 1621]	3033	[592, 4020]	4615	[5255, 5271]	6197	[6234, 3741]
1452	[2121, 839]	3034	[4021, 1783]	4616	[5343, 4059]	6198	[5371, 560]
1453	[1817, 2241]	3035	[4022, 150]	4617	[5344, 532]	6199	[6235, 2008]
1454	[2242, 2243]	3036	[3603, 531]	4618	[5296, 1609]	6200	[6236, 2002]
1455	[2244, 823]	3037	[3929, 3976]	4619	[5345, 5346]	6201	[6237, 1597]
1456	[781, 1827]	3038	[3584, 1819]	4620	[2137, 1786]	6202	[4283, 5914]
1457	[1933, 38]	3039	[2327, 4023]	4621	[2257, 2175]	6203	[6238, 2271]
1458	[2245, 2213]	3040	[1733, 3705]	4622	[3959, 1580]	6204	[6239, 1620]
1459	[1893, 555]	3041	[4024, 664]	4623	[5347, 3990]	6205	[6240, 1803]

1460	[2246, 2247]	3042	[4025, 622]	4624	[1783, 229]	6206	[6241, 128]
1461	[2248, 1770]	3043	[2346, 1911]	4625	[1878, 3777]	6207	[6242, 191]
1462	[2249, 1847]	3044	[3806, 4026]	4626	[3993, 4248]	6208	[6243, 4211]
1463	[2250, 2251]	3045	[2161, 2284]	4627	[776, 2317]	6209	[6244, 1812]
1464	[2252, 2253]	3046	[3611, 3750]	4628	[5277, 515]	6210	[6144, 1916]
1465	[2254, 742]	3047	[2312, 4027]	4629	[561, 577]	6211	[6245, 1763]
1466	[2255, 2256]	3048	[4028, 1673]	4630	[527, 1986]	6212	[793, 4089]
1467	[2257, 2258]	3049	[4029, 1954]	4631	[1693, 4062]	6213	[6246, 1947]
1468	[2259, 705]	3050	[3850, 1628]	4632	[2340, 1860]	6214	[6247, 144]
1469	[2260, 2261]	3051	[3950, 2157]	4633	[4271, 4101]	6215	[6248, 1996]
1470	[2262, 2065]	3052	[4030, 3658]	4634	[4250, 3998]	6216	[6249, 61]
1471	[2263, 2264]	3053	[4031, 2189]	4635	[5348, 62]	6217	[5954, 3562]
1472	[2265, 1969]	3054	[4032, 177]	4636	[1670, 3816]	6218	[6250, 1630]
1473	[2266, 826]	3055	[3890, 4033]	4637	[4277, 1889]	6219	[6192, 140]
1474	[2267, 1688]	3056	[4034, 167]	4638	[724, 5349]	6220	[4283, 4137]
1475	[1820, 2268]	3057	[4035, 1647]	4639	[5350, 2151]	6221	[6251, 164]
1476	[2269, 566]	3058	[4036, 822]	4640	[3634, 5222]	6222	[6252, 1812]
1477	[1677, 1632]	3059	[762, 591]	4641	[5351, 5352]	6223	[6253, 1996]
1478	[2269, 525]	3060	[2305, 827]	4642	[4162, 1713]	6224	[5970, 3986]
1479	[590, 662]	3061	[2279, 3620]	4643	[5215, 171]	6225	[6254, 778]
1480	[569, 1954]	3062	[4024, 3705]	4644	[5289, 858]	6226	[626, 2288]
1481	[2270, 606]	3063	[3802, 2340]	4645	[5353, 2051]	6227	[6183, 6177]
1482	[1772, 221]	3064	[1928, 134]	4646	[3729, 1649]	6228	[6255, 1763]
1483	[2271, 1813]	3065	[1933, 502]	4647	[171, 5340]	6229	[6256, 669]
1484	[1961, 577]	3066	[4037, 1923]	4648	[491, 4256]	6230	[4959, 902]
1485	[1913, 153]	3067	[551, 240]	4649	[5290, 587]	6231	[6257, 1238]
1486	[2272, 645]	3068	[4038, 4039]	4650	[1835, 4182]	6232	[6258, 3104]
1487	[2273, 2274]	3069	[3844, 4040]	4651	[3689, 806]	6233	[6259, 1491]
1488	[2275, 2276]	3070	[2076, 596]	4652	[769, 167]	6234	[2992, 2838]
1489	[2277, 518]	3071	[2234, 3570]	4653	[3834, 1927]	6235	[6260, 6261]
1490	[2278, 1615]	3072	[1624, 548]	4654	[5354, 4141]	6236	[1560, 3206]
1491	[486, 601]	3073	[1833, 722]	4655	[3915, 2183]	6237	[6262, 1516]
1492	[2279, 575]	3074	[693, 4041]	4656	[5355, 2106]	6238	[6263, 5669]
1493	[39, 705]	3075	[1600, 3568]	4657	[5356, 729]	6239	[6264, 5842]
1494	[2280, 2281]	3076	[3562, 1692]	4658	[3636, 868]	6240	[6265, 6266]
1495	[1671, 150]	3077	[4042, 809]	4659	[4087, 3849]	6241	[6267, 4921]
1496	[1609, 2282]	3078	[4043, 516]	4660	[5357, 1750]	6242	[1369, 375]
1497	[714, 2283]	3079	[4044, 4045]	4661	[3793, 1776]	6243	[6268, 2966]
1498	[682, 2284]	3080	[4046, 14]	4662	[683, 3857]	6244	[4414, 5203]
1499	[2285, 1576]	3081	[4047, 3704]	4663	[1585, 2319]	6245	[6269, 2541]
1500	[1789, 875]	3082	[213, 531]	4664	[5358, 2258]	6246	[6270, 3149]
1501	[2286, 2287]	3083	[1581, 1576]	4665	[5286, 3980]	6247	[2585, 4402]
1502	[2288, 2289]	3084	[4048, 1571]	4666	[5359, 5360]	6248	[6271, 1410]
1503	[1970, 1939]	3085	[4049, 2152]	4667	[3585, 3572]	6249	[5887, 986]

1504	[2290, 2291]	3086	[4050, 1802]	4668	[4192, 4055]	6250	[5071, 4733]
1505	[2292, 2293]	3087	[690, 2136]	4669	[2183, 1893]	6251	[6272, 402]
1506	[2294, 597]	3088	[205, 4051]	4670	[801, 3756]	6252	[4767, 2755]
1507	[2295, 2280]	3089	[2227, 776]	4671	[5361, 5338]	6253	[6273, 5771]
1508	[2296, 1960]	3090	[4052, 799]	4672	[4057, 3649]	6254	[6274, 5136]
1509	[595, 2225]	3091	[4053, 1828]	4673	[3762, 177]	6255	[6275, 6276]
1510	[2201, 491]	3092	[4054, 1698]	4674	[3821, 565]	6256	[5730, 4422]
1511	[2297, 1634]	3093	[1685, 4055]	4675	[5362, 2116]	6257	[6277, 4153]
1512	[1824, 238]	3094	[4056, 800]	4676	[5363, 687]	6258	[6278, 4153]
1513	[2298, 2299]	3095	[4057, 2130]	4677	[5263, 2189]	6259	[6279, 2279]
1514	[757, 2300]	3096	[2179, 495]	4678	[1872, 2016]	6260	[6280, 846]
1515	[1670, 2301]	3097	[2340, 1590]	4679	[5364, 1584]	6261	[5279, 748]
1516	[1811, 827]	3098	[4058, 4059]	4680	[5365, 1600]	6262	[6281, 2302]
1517	[2302, 829]	3099	[56, 512]	4681	[4267, 1836]	6263	[6156, 682]
1518	[2303, 151]	3100	[4060, 699]	4682	[3970, 3761]	6264	[6282, 1808]
1519	[2304, 2199]	3101	[2202, 248]	4683	[5362, 3713]	6265	[5420, 3569]
1520	[2305, 668]	3102	[4061, 4062]	4684	[4189, 2021]	6266	[554, 1894]
1521	[485, 2306]	3103	[3847, 2017]	4685	[3979, 5287]	6267	[6283, 602]
1522	[1861, 712]	3104	[1867, 2133]	4686	[4027, 5366]	6268	[6284, 57]
1523	[1593, 776]	3105	[3716, 3553]	4687	[3804, 1999]	6269	[6285, 1735]
1524	[2307, 2308]	3106	[4063, 3702]	4688	[1793, 1855]	6270	[3655, 1968]
1525	[873, 1613]	3107	[2347, 1748]	4689	[5364, 3996]	6271	[6286, 602]
1526	[1998, 1712]	3108	[3795, 3803]	4690	[5367, 2023]	6272	[6287, 2279]
1527	[2288, 1969]	3109	[4064, 1624]	4691	[5368, 1602]	6273	[6288, 485]
1528	[524, 566]	3110	[4065, 3807]	4692	[806, 1920]	6274	[6289, 497]
1529	[1679, 567]	3111	[4066, 1695]	4693	[2217, 742]	6275	[6290, 1815]
1530	[2309, 2310]	3112	[3898, 1923]	4694	[5369, 2205]	6276	[194, 2221]
1531	[2311, 2253]	3113	[4067, 1781]	4695	[4188, 2208]	6277	[6291, 109]
1532	[1932, 501]	3114	[3752, 1822]	4696	[5325, 2326]	6278	[6292, 4876]
1533	[2072, 2312]	3115	[712, 1887]	4697	[3977, 4270]	6279	[2669, 1046]
1534	[2313, 563]	3116	[2284, 3857]	4698	[1855, 1774]	6280	[3541, 4943]
1535	[2314, 2315]	3117	[4068, 515]	4699	[4056, 1751]	6281	[1236, 1497]
1536	[2316, 2289]	3118	[2320, 613]	4700	[2013, 3888]	6282	[5660, 277]
1537	[2267, 1764]	3119	[2186, 4004]	4701	[229, 3983]	6283	[1490, 2659]
1538	[672, 210]	3120	[4069, 1683]	4702	[3999, 5268]	6284	[6293, 117]
1539	[1594, 2317]	3121	[4070, 1961]	4703	[5370, 617]	6285	[6294, 1216]
1540	[2318, 2319]	3122	[618, 563]	4704	[4278, 3787]	6286	[1316, 3346]
1541	[2320, 1588]	3123	[4071, 4033]	4705	[5329, 2071]	6287	[5128, 4594]
1542	[2321, 2322]	3124	[571, 1860]	4706	[5368, 2185]	6288	[4936, 5019]
1543	[2323, 1640]	3125	[4072, 866]	4707	[5371, 1960]	6289	[5144, 3329]
1544	[2324, 2078]	3126	[201, 4073]	4708	[3931, 3983]	6290	[6295, 5875]
1545	[2325, 793]	3127	[4074, 3763]	4709	[2255, 5372]	6291	[6296, 217]
1546	[1796, 2326]	3128	[4075, 186]	4710	[5373, 1972]	6292	[6297, 4050]
1547	[1634, 2327]	3129	[2337, 4076]	4711	[5374, 1697]	6293	[6298, 232]

1548	[2328, 2329]	3130	[3941, 1941]	4712	[795, 2322]	6294	[5476, 2000]
1549	[2330, 716]	3131	[4077, 683]	4713	[5375, 3985]	6295	[36, 3863]
1550	[2331, 725]	3132	[3841, 2049]	4714	[715, 3596]	6296	[6299, 426]
1551	[2332, 2333]	3133	[4078, 2345]	4715	[5376, 5377]	6297	[6300, 1503]
1552	[2109, 200]	3134	[4079, 2339]	4716	[5267, 3631]	6298	[6301, 313]
1553	[2334, 2335]	3135	[4080, 3764]	4717	[5301, 1972]	6299	[6302, 787]
1554	[732, 793]	3136	[736, 666]	4718	[2314, 4111]	6300	[5233, 1643]
1555	[2336, 679]	3137	[3652, 3788]	4719	[5378, 2026]	6301	[6303, 834]
1556	[2337, 2338]	3138	[4081, 3646]	4720	[3839, 3899]	6302	[6304, 1053]
1557	[2339, 2340]	3139	[4082, 611]	4721	[3826, 3866]	6303	[6305, 1508]
1558	[2286, 2341]	3140	[2282, 2013]	4722	[5379, 3822]	6304	[6306, 756]
1559	[2342, 1971]	3141	[3601, 655]	4723	[5322, 4184]	6305	[6307, 595]
1560	[2261, 1637]	3142	[4083, 493]	4724	[3581, 4156]	6306	[6308, 2692]
1561	[1838, 60]	3143	[3588, 2340]	4725	[5380, 1772]	6307	[6309, 3381]
1562	[144, 2018]	3144	[3828, 2175]	4726	[4144, 814]	6308	[6310, 3819]
1563	[2343, 2134]	3145	[4084, 1892]	4727	[5269, 5236]	6309	[6311, 1755]
1564	[2005, 1804]	3146	[3825, 645]	4728	[5354, 4208]	6310	[6312, 89]
1565	[2344, 858]	3147	[827, 4019]	4729	[652, 3913]	6311	[6313, 1129]
1566	[1902, 2345]	3148	[3620, 4085]	4730	[3557, 61]	6312	[6314, 178]
1567	[2346, 2102]	3149	[1896, 832]	4731	[3774, 818]	6313	[6315, 1898]
1568	[2347, 218]	3150	[2107, 3645]	4732	[1827, 639]	6314	[6316, 349]
1569	[502, 1673]	3151	[3987, 2195]	4733	[650, 535]	6315	[6317, 2891]
1570	[2348, 2349]	3152	[4086, 1811]	4734	[3791, 2195]	6316	[6318, 656]
1571	[2350, 2351]	3153	[4047, 1626]	4735	[5219, 3708]	6317	[6319, 3552]
1572	[2352, 903]	3154	[4087, 3954]	4736	[207, 5381]	6318	[6320, 1196]
1573	[2353, 2354]	3155	[822, 4088]	4737	[5382, 2070]	6319	[6321, 4296]
1574	[2355, 1405]	3156	[1633, 1827]	4738	[5383, 212]	6320	[6322, 1660]
1575	[2356, 2357]	3157	[36, 4089]	4739	[845, 1722]	6321	[3925, 3885]
1576	[2358, 2359]	3158	[2149, 651]	4740	[805, 3852]	6322	[6323, 2707]
1577	[2360, 2361]	3159	[4090, 2308]	4741	[3738, 557]	6323	[5381, 3821]
1578	[2362, 2363]	3160	[623, 1877]	4742	[5384, 3873]		
1579	[2364, 2365]	3161	[495, 3879]	4743	[5385, 1654]		
1580	[76, 1023]	3162	[186, 837]	4744	[5320, 3866]		
1581	[2366, 2367]	3163	[2012, 3572]	4745	[631, 3727]		

Output function $n \mapsto \tau(n)$:

n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$
0	0	1055	1	2110	0	3165	1	4220	1
1	0	1056	1	2111	1	3166	1	4221	0
2	0	1057	1	2112	1	3167	0	4222	1
3	0	1058	0	2113	0	3168	0	4223	0
4	0	1059	1	2114	1	3169	1	4224	1
5	0	1060	0	2115	0	3170	1	4225	1
6	0	1061	0	2116	0	3171	1	4226	1

7	0	1062	0	2117	1	3172	1	4227	1	5282	1
8	0	1063	0	2118	0	3173	0	4228	0	5283	0
9	0	1064	1	2119	0	3174	1	4229	0	5284	0
10	1	1065	1	2120	0	3175	1	4230	0	5285	0
11	0	1066	0	2121	1	3176	0	4231	1	5286	1
12	0	1067	1	2122	1	3177	1	4232	1	5287	0
13	0	1068	0	2123	0	3178	1	4233	0	5288	0
14	0	1069	1	2124	0	3179	1	4234	1	5289	1
15	0	1070	1	2125	0	3180	0	4235	1	5290	0
16	0	1071	1	2126	0	3181	1	4236	0	5291	1
17	0	1072	0	2127	0	3182	1	4237	0	5292	1
18	1	1073	1	2128	0	3183	1	4238	0	5293	0
19	0	1074	0	2129	1	3184	1	4239	0	5294	0
20	1	1075	0	2130	0	3185	0	4240	0	5295	1
21	1	1076	1	2131	0	3186	0	4241	1	5296	1
22	0	1077	1	2132	0	3187	0	4242	0	5297	1
23	0	1078	1	2133	1	3188	1	4243	1	5298	0
24	1	1079	1	2134	0	3189	1	4244	1	5299	1
25	0	1080	0	2135	0	3190	0	4245	1	5300	1
26	0	1081	0	2136	0	3191	1	4246	0	5301	1
27	0	1082	0	2137	0	3192	0	4247	1	5302	0
28	0	1083	1	2138	0	3193	1	4248	1	5303	1
29	0	1084	1	2139	0	3194	0	4249	0	5304	0
30	0	1085	0	2140	1	3195	0	4250	1	5305	0
31	0	1086	1	2141	1	3196	0	4251	1	5306	1
32	1	1087	1	2142	0	3197	1	4252	0	5307	0
33	0	1088	0	2143	0	3198	0	4253	1	5308	1
34	0	1089	0	2144	0	3199	0	4254	0	5309	1
35	0	1090	0	2145	0	3200	0	4255	0	5310	0
36	1	1091	1	2146	0	3201	0	4256	1	5311	0
37	1	1092	1	2147	1	3202	0	4257	1	5312	1
38	0	1093	0	2148	0	3203	1	4258	0	5313	1
39	0	1094	0	2149	1	3204	0	4259	1	5314	0
40	0	1095	0	2150	1	3205	1	4260	1	5315	0
41	1	1096	0	2151	0	3206	0	4261	1	5316	0
42	1	1097	0	2152	1	3207	0	4262	0	5317	0
43	1	1098	0	2153	1	3208	0	4263	1	5318	1
44	1	1099	1	2154	1	3209	0	4264	0	5319	0
45	0	1100	0	2155	1	3210	1	4265	1	5320	1
46	0	1101	0	2156	1	3211	0	4266	0	5321	0
47	0	1102	0	2157	1	3212	0	4267	0	5322	0
48	0	1103	1	2158	1	3213	0	4268	0	5323	1
49	1	1104	0	2159	0	3214	1	4269	1	5324	0
50	0	1105	1	2160	0	3215	1	4270	1	5325	0

51	0	1106	0	2161	0	3216	0	4271	1	5326	1
52	1	1107	0	2162	0	3217	0	4272	1	5327	1
53	0	1108	1	2163	0	3218	1	4273	1	5328	1
54	0	1109	1	2164	0	3219	0	4274	1	5329	0
55	0	1110	0	2165	1	3220	1	4275	0	5330	1
56	1	1111	1	2166	1	3221	0	4276	1	5331	1
57	0	1112	0	2167	1	3222	0	4277	1	5332	1
58	1	1113	1	2168	1	3223	0	4278	1	5333	0
59	0	1114	0	2169	0	3224	0	4279	1	5334	1
60	0	1115	1	2170	0	3225	0	4280	1	5335	1
61	0	1116	0	2171	1	3226	1	4281	0	5336	1
62	1	1117	0	2172	1	3227	1	4282	0	5337	1
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65	1	1120	0	2175	1	3230	0	4285	0	5340	0
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67	0	1122	0	2177	0	3232	0	4287	0	5342	1
68	0	1123	0	2178	0	3233	1	4288	0	5343	1
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72	1	1127	0	2182	0	3237	0	4292	1	5347	0
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74	0	1129	0	2184	0	3239	0	4294	0	5349	1
75	1	1130	1	2185	0	3240	1	4295	1	5350	0
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83	1	1138	0	2193	0	3248	0	4303	1	5358	0
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85	1	1140	1	2195	0	3250	0	4305	0	5360	0
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89	1	1144	1	2199	1	3254	0	4309	1	5364	0
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91	0	1146	0	2201	0	3256	0	4311	1	5366	1
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331	1	1386	1	2441	1	3496	0	4551	0	5606	1
332	0	1387	1	2442	1	3497	1	4552	0	5607	1
333	0	1388	1	2443	1	3498	0	4553	0	5608	1
334	1	1389	0	2444	1	3499	0	4554	1	5609	1
335	1	1390	0	2445	0	3500	1	4555	0	5610	0
336	0	1391	0	2446	1	3501	0	4556	0	5611	1
337	1	1392	0	2447	0	3502	0	4557	0	5612	1
338	0	1393	0	2448	0	3503	0	4558	0	5613	0
339	0	1394	0	2449	0	3504	1	4559	1	5614	0
340	0	1395	1	2450	1	3505	0	4560	0	5615	1
341	1	1396	0	2451	1	3506	0	4561	0	5616	1
342	1	1397	0	2452	0	3507	1	4562	0	5617	0
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344	1	1399	1	2454	1	3509	1	4564	1	5619	1
345	1	1400	1	2455	0	3510	1	4565	0	5620	1
346	0	1401	0	2456	1	3511	1	4566	1	5621	0
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348	1	1403	1	2458	0	3513	0	4568	0	5623	1
349	1	1404	1	2459	0	3514	1	4569	0	5624	0
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351	0	1406	1	2461	1	3516	0	4571	0	5626	0
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353	0	1408	0	2463	1	3518	1	4573	1	5628	1
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355	1	1410	1	2465	0	3520	1	4575	1	5630	0
356	0	1411	0	2466	1	3521	1	4576	1	5631	1
357	1	1412	0	2467	1	3522	1	4577	0	5632	0
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361	0	1416	0	2471	1	3526	1	4581	0	5636	0
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366	1	1421	0	2476	1	3531	1	4586	1	5641	0
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371	0	1426	0	2481	1	3536	0	4591	1	5646	0
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386	0	1441	0	2496	0	3551	0	4606	1	5661	1
387	1	1442	1	2497	0	3552	0	4607	1	5662	0
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389	0	1444	1	2499	1	3554	0	4609	1	5664	0
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392	0	1447	1	2502	0	3557	0	4612	1	5667	1
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395	0	1450	0	2505	0	3560	0	4615	1	5670	0
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405	0	1460	0	2515	1	3570	1	4625	1	5680	0
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407	1	1462	0	2517	0	3572	1	4627	1	5682	0
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411	0	1466	0	2521	0	3576	1	4631	0	5686	0
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414	0	1469	1	2524	1	3579	0	4634	1	5689	1
415	0	1470	0	2525	0	3580	1	4635	1	5690	0
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417	1	1472	0	2527	0	3582	0	4637	1	5692	1
418	0	1473	1	2528	1	3583	1	4638	0	5693	1
419	0	1474	1	2529	1	3584	1	4639	0	5694	0
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423	0	1478	0	2533	0	3588	1	4643	0	5698	1
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427	1	1482	0	2537	0	3592	0	4647	0	5702	1
428	0	1483	1	2538	1	3593	0	4648	1	5703	1
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431	1	1486	1	2541	1	3596	1	4651	0	5706	1
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435	1	1490	1	2545	0	3600	0	4655	0	5710	0
436	1	1491	0	2546	1	3601	0	4656	0	5711	1
437	0	1492	0	2547	1	3602	1	4657	1	5712	1
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441	1	1496	0	2551	1	3606	0	4661	1	5716	1
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445	1	1500	0	2555	0	3610	1	4665	1	5720	1
446	0	1501	1	2556	0	3611	1	4666	1	5721	1

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463	1	1518	1	2573	1	3628	1	4683	1	5738	1
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465	0	1520	0	2575	1	3630	0	4685	0	5740	0
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557	1	1612	1	2667	1	3722	1	4777	1	5832	1
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561	0	1616	0	2671	0	3726	0	4781	0	5836	0
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603	1	1658	1	2713	0	3768	1	4823	1	5878	0
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605	1	1660	0	2715	0	3770	1	4825	0	5880	0
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609	1	1664	1	2719	0	3774	0	4829	1	5884	1
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613	0	1668	0	2723	0	3778	1	4833	0	5888	1
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620	0	1675	0	2730	0	3785	1	4840	1	5895	0
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627	1	1682	0	2737	0	3792	1	4847	1	5902	1
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639	1	1694	1	2749	0	3804	0	4859	1	5914	0
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717	1	1772	0	2827	0	3882	1	4937	1	5992	1
718	1	1773	1	2828	0	3883	0	4938	0	5993	0
719	0	1774	1	2829	0	3884	0	4939	1	5994	1
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745	1	1800	1	2855	1	3910	1	4965	0	6020	1
746	0	1801	0	2856	0	3911	1	4966	0	6021	0
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867	1	1922	0	2977	0	4032	0	5087	0	6142	0
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871	1	1926	0	2981	0	4036	0	5091	0	6146	1
872	0	1927	1	2982	1	4037	0	5092	0	6147	0
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875	1	1930	1	2985	0	4040	1	5095	1	6150	0
876	0	1931	1	2986	1	4041	1	5096	1	6151	1
877	0	1932	0	2987	0	4042	0	5097	1	6152	1
878	0	1933	1	2988	0	4043	0	5098	1	6153	1
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882	1	1937	1	2992	0	4047	1	5102	0	6157	1
883	0	1938	0	2993	1	4048	0	5103	1	6158	0
884	0	1939	0	2994	0	4049	0	5104	0	6159	0
885	1	1940	0	2995	1	4050	0	5105	0	6160	1
886	0	1941	0	2996	1	4051	1	5106	1	6161	0

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888	1	1943	0	2998	1	4053	0	5108	0	6163	1
889	0	1944	1	2999	1	4054	1	5109	1	6164	1
890	1	1945	1	3000	0	4055	1	5110	1	6165	0
891	1	1946	1	3001	0	4056	0	5111	0	6166	1
892	0	1947	1	3002	1	4057	0	5112	0	6167	1
893	0	1948	0	3003	1	4058	1	5113	0	6168	0
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895	1	1950	1	3005	1	4060	1	5115	1	6170	0
896	1	1951	1	3006	1	4061	1	5116	1	6171	1
897	1	1952	0	3007	1	4062	0	5117	1	6172	0
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901	1	1956	1	3011	0	4066	0	5121	1	6176	0
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903	1	1958	1	3013	1	4068	1	5123	0	6178	1
904	1	1959	0	3014	0	4069	0	5124	0	6179	0
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906	0	1961	1	3016	0	4071	0	5126	1	6181	1
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946	1	2001	0	3056	0	4111	0	5166	1	6221	1
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